LBT-D305/D305CD

SERVICE MANUAL

AEP Model
LBT-D305
UK Model
LBT-D305/D305CD

These systems are composed of following models. As for the service manual, it is issued for each component model, then, please refer to it.

COMPONENT MODEL NAME FOR THESE SYSTEM

	LBT-D305			LBT-D305CD
	AEP	Germany	UK	UK
DECK RECEIVER	HST-D305			
TURN TABLE	PS-LX46P			
CD PLAYER	CDP-M12			CDP-M12 or CDP-C311M
SPEAKER SYSTEM	SS-A305			

PARTS LIST

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Part No.	Description	Remarks
1-501-369-11	ANTENNA	
1-501-374-11	ANTENNA, LOOP	
3-701-806-00	ADAPTOR, 45, (E)	
3-753-137-11	MANUAL, INSTRUCTION (AEP) (ENGLISH, F, E, P)	
3-753-137-41	MANUAL, INSTRUCTION (AEP, GERMANY) (D, NL, S, I)	
3-753-137-51	MANUAL, INSTRUCTION (UK) (ENGLISH)	
* 4-944-254-01	INDIVIDUAL CARTON (D305CD)	
* 4-944-255-01	INDIVIDUAL CARTON (D305: UK)	
* 4-944-256-01	INDIVIDUAL CARTON (AEP, GERMANY)	

Part No.	Description	Remarks
1-465-697-11	REMOTE COMMANDER (RM-S305) (HST)	
3-707-584-01	COVER, BATTERY (HST)	
* 4-896-384-01	CUSHION (RIGHT) (PS)	
* 4-896-385-01	CUSHION (LEFT) (PS)	
4-921-934-01	SHEET, PROTECTION (HST)	
* 4-945-026-01	CUSHION (HST)	

F : FRENCH
D : GERMAN
I : ITALIAN
NL: DUTCH (HOLLAND)
P : PORTUGUESE
E : SPANISH
S : SWEDISH

COMPACT Hi-Fi STEREO SYSTEM

SONY®

English
91B0958-1
Printed in Japan
© 1991. 2
Published by Customer Relations and Service Group

Sony Corporation
Audio Group

9-956-334-11

HST-D305

SERVICE MANUAL

AEP Model
UK Model

HST-D305 are the
STEREO DECK RECEIVER
in LBT-D305/D305CD.

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol ᗡᗞ are trademarks of Dolby Laboratories Licensing Corporation.

Model Name Using Similar Mechanism	NEW
Tape Transport Mechanism Type	DECK A TCM-190RA12B
	DECK B TCM-190RB22B

SPECIFICATIONS

Tuner

System	FM stereo FM/AM superheterodyne tuner
FM tuner section	
Tuning range	87.5 to 108 MHz
Antenna	75 ohms unbalanced
Intermediate frequency	10.7 MHz
MW/LW tuner section	
Tuning range	MW: 522 to 1,611 kHz (Italian model) 531 to 1,602 kHz (AEP, UK, Germany model) LW: 144 to 288 kHz (Italian model) 153 to 279 kHz (AEP, UK, Germany model)
Antenna	AM loop antenna External antenna terminal
Intermediate frequency	450 kHz

Amplifier

DIN power output	35 W + 35 W (6 ohms, at 1 kHz)
Continuous RMS power output	43 W + 43 W (6 ohms, at 1 kHz, 5% THD)
Music power output	75 W + 75 W (6 ohms)

Input	Jack type	Sensitivity	Impedance
PHONO	Phono	2 mV	47 kohms
VIDEO	Phono	200 mV	47 kohms
CD	Phono	200 mV	47 kohms

Output	Jack type	Impedance
SURROUND SPEAKER	Phono	Accepts speakers of 16 ohms
HEADPHONES	Stereophone	Accepts headphones of 8 ohms or more

Frequency response	CD: 15 Hz to 50 kHz $^{+0}_{-3}$ dB

Cassette deck

Recording system	4-track 2-channel stereo
Frequency response	DOLBY NR OFF With Type II cassette (Sony UX-S) 40 Hz to 14 kHz (±3 dB) With Type I cassette (Sony HF-S) 40 Hz to 13 kHz (±3 dB)

— continued on next page —

MICROFILM

COMPACT HI-FI STEREO SYSTEM

SONY®

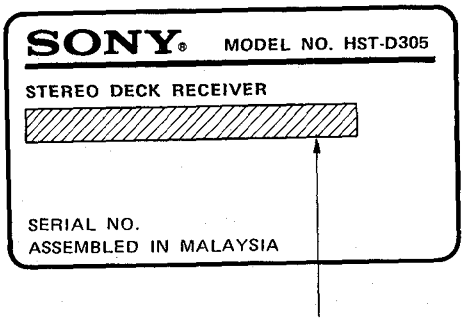
Wow and flutter	±0.2% (DIN)
General	
Power requirements	220−230 V AC, 50/60 Hz (AEP, Germany, Italian models) 240 V AC, 50 Hz (UK model)
Power consumption	110 W
AC outlet	Switched, 100 W max.
Weight	Approx. 9.2 kg
Dimensions	Approx. 355 × 377 × 325 mm (w/h/d, including projections)

Supplied accessories
Remote commander RM-S305 (1)
Batteries Sony SUM-3 (NS) (2)
FM wire antenna (1)
AM loop antenna (1)

Design and specifications subject to change without notice.

Note
This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

MODEL IDENTIFICATION
—Specification Label—



AEP, Germany, Italian Model: AC: 220 V−230 V~50/60 Hz
UK Model: AC: 240 V~50 Hz

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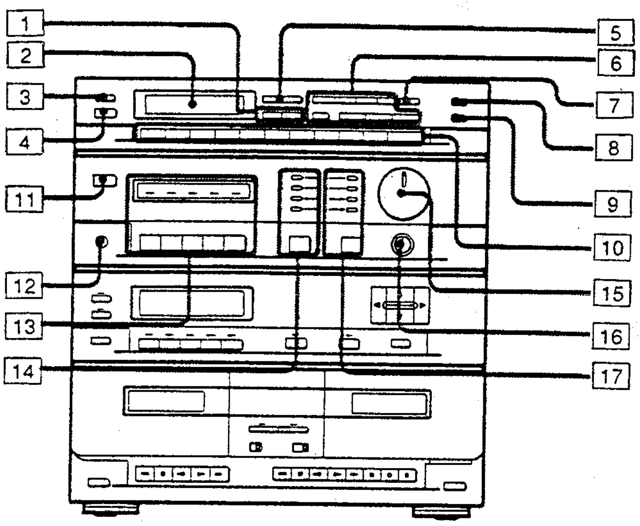
SAFETY-RELATED COMPONENT WARNING!!

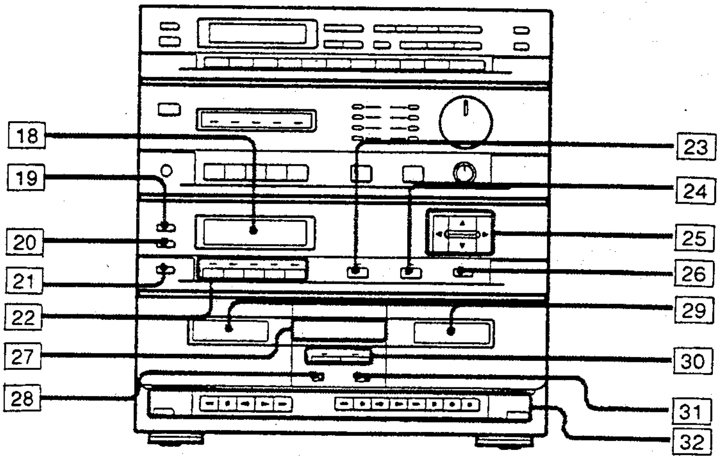
COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SECTION 1
GENERAL

This section is extracted from instruction manual.

1-1. LOCATION OF CONTROLS





Refer to the pages indicated in ● for details.

Tuner

1 DUAL MODE TUNING button ⑯
2 Display window
3 SLEEP button ㊸
4 Remote sensor
5 BAND SELECTOR ⑭
6 Buttons for setting the clock and timer ㊵
7 TIME/FREQ button ㊵
8 MEMORY button ⑯
9 ST/MUTE button ⑭
10 Buttons for storing station frequencies ⑰

Amplifier

11 POWER switch ⑩
12 HEADPHONES jack
13 Function selectors and indicators
14 DBFB (dynamic bass feedback) button and LEVEL INDICATOR ㉚
15 VOLUME control ⑩
16 BALANCE control ⑩
17 SURROUND button and LEVEL INDICATOR ㉚

Graphic equalizer

18 Display window
19 EFFECT button ㉚
20 EQ REC button ㉚
21 DISPLAY button ㉞
22 Numeric buttons and indicators ㉜
23 MEMORY button ㊳
24 PERSONAL FILE button ㊳
25 CURSOR CONTROL ㊱
26 CLEAR button ㊳

Cassette deck

27 Operating indicators
28 DOLBY NR (noise reduction) switch ㉕
29 Cassette holders
30 SYNCHRO DUBBING buttons ㉙
31 DIRECTION MODE selector ㉒
32 Tape operation buttons ⑱
◀◀ Leftward fast winding,
▶▶ Rightward fast winding,
▶ Forward play,
◀ Reverse play,
■ Stop,
⏏ EJECT,
PAUSE ❚❚ Pause,
REC MUTE ○ Record muting,
REC ● Record,

SECTION 2
ADJUSTMENTS

2-1. MECHANICAL ADJUSTMENTS PRECAUTIONS

1. Clean the following parts with a denatured alcohol-moistened swab:

record/playback head	pinch roller
erase head	rubber belts
capstan	idlers

2. Demagnetize the record/playback head with a head demagnetizer.
   (Head demagnetizer do not approach for the erase head.)
3. Do not use a magnetized screwdriver for the adjustment.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be perfomed with the rated power supply voltage unless otherwise noted.

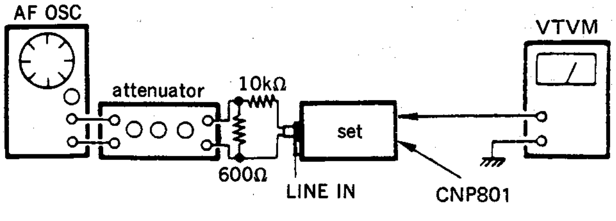
Torque Measurement

Torque	Torque meter	Meter reading
FWD	CQ-102C	35 to 60g•cm (0.49 to 0.83 oz•inch)
FWD Back tension	CQ-102C	2 to 6g•cm (0.028 to 0.084oz•inch)
Reverse	CQ-102RB	35 to 60g•cm (0.49 to 0.83 oz•inch)
Reverse Back tension	CQ-102RB	2 to 6g•cm (0.028 to 0.084oz•inch)
FF, REW	CQ-201B	70 to 110g•cm (0.98 to 1.52 oz•inch)

2-2. ELECTRICAL ADJUSTMENTS PRECAUTIONS

1. The adjustment should be performed in the publication. (Be sure to make playback adjustment at first.)
2. The adjustment and measurement should be performed for both L-CH and R-CH.
   - Switch position
     DOLBY NR switch : OFF
     DIR MODE switch : ⇄
   - Standard record position
     Deliver the standard input signal level to input jack and set the REC LEVEL control to obtain the standard output signal level as follows.

—Record Mode—


AF OSC
attenuator
10kΩ
600Ω
set
LINE IN
CNP801
VTVM

Standard Input Level

Input terminal	LINE IN
source impedance	10kΩ
input signal level	0.25V (−10dB)

Standard Output Level

Output terminal	LINE OUT
load impedance	47kΩ
output signal level	0.44V (−5dB)

Test Tape

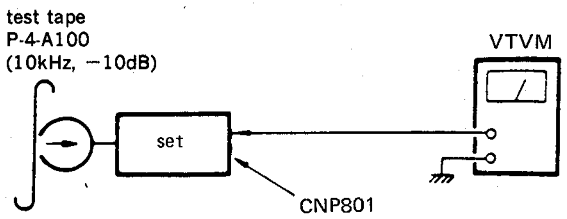
Tape	Contents	Use
P-4-A100	10kHz, −10dB	Azimuth Adjustment
P-4-L300	315Hz, 0dB	Level Adjustment
WS-48B	3kHz, 0dB	Tape Speed Adjustment

Record/Playback Head Azimuth Adjustment

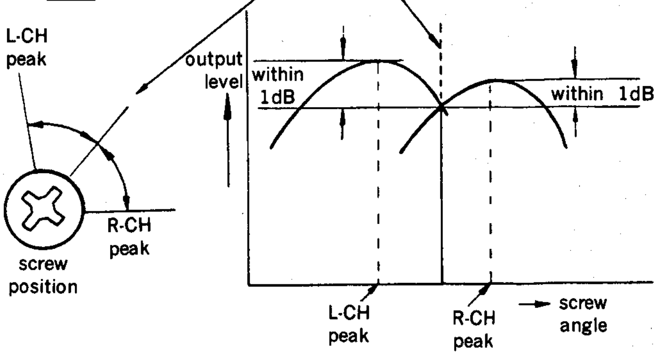
DECK A **DECK B**

Procedure:

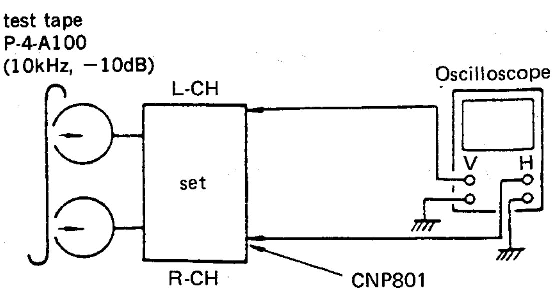
1. FWD Playback Mode

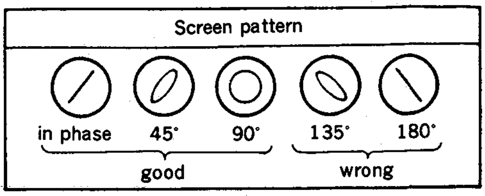

test tape
P-4-A100
(10kHz, −10dB)
set
VTVM
CNP801

2. Turn the adjustment screw for the maximum output levels. If these levels do notmatch, turn the adjustment screw until both of output levels match together within 1dB.


L-CH peak
output level
within 1dB
within 1dB
R-CH peak
screw position
L-CH peak
R-CH peak
screw angle

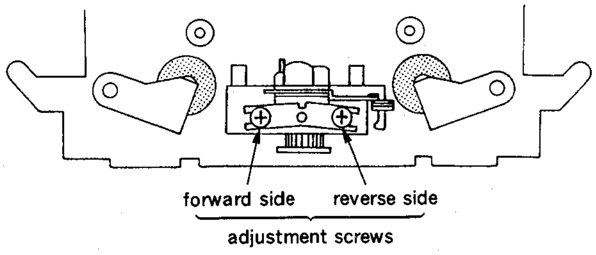
3. Playback Mode


test tape
P-4-A100
(10kHz, −10dB)
L-CH
set
R-CH
Oscilloscope
V
H
CNP801


Screen pattern
in phase
45°
90°
135°
180°
good
wrong

4. Change the reverse playback mode and repeat the steps 1 to 3.
5. After the adjustment, lock the adjustment screw with suitable locking compound.

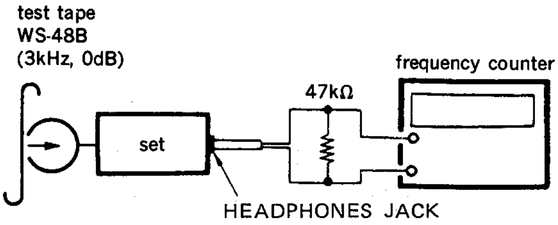
Adjustment Location : record/playback head


forward side
reverse side
adjustment screws

Tape Speed Adjustment DECK A DECK B

Procedure :

–FWD Playback Mode–


test tape
WS-48B
(3kHz, 0dB)
frequency counter
47kΩ
set
HEADPHONES JACK

Perform high speed adjustment before normal speed adjustment.

(high speed adjustment)

1. Short test pin CNP901 on TC SIGNAL board.
2. Set to FWD playback mode.
3. Keep on pressing the HIGH SPEED DUBBING switch.
4. Adjust RV72 so that the frequency counter reading becomes 6,000±30Hz.
5. After adjustment, disconnect TP801 shorted in step 1.

(normal speed adjustment)

1. Set to FWD playback mode.
2. Adjust RV71 so that the frequency counter reading becomes 3,000 ± 15 Hz.

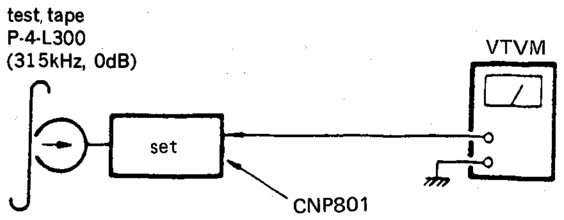
Frequency difference between deck A and deck B the beginning of the tape should be within 1.0%.

Adjustment Location : MD-A, MD-B board

Playback Level Adjustment DECK A DECK B

Procedure :

–FWD Playback Mode–


test tape
P-4-L300
(315kHz, 0dB)
VTVM
set
CNP801

Adjust deck A/B: RV11 (L-CH), RV21 (R-CH) so that the VTVM reading becomes the adjustment limits below.

Adjustment Limits :

LINE OUT level: –2.7±1.5dB

Level Difference between Channels: within 1.0dB

Confirm the LINE OUT level does not change in playback mode while changing the mode from playback to stop several times.

Adjustment Location : MD-A, MD-B board

Record Bias Adjustment DECK B

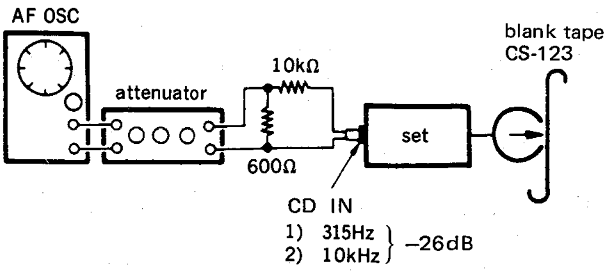
Setting :

REC LEVEL control: standard record position (Refer to page 4.)

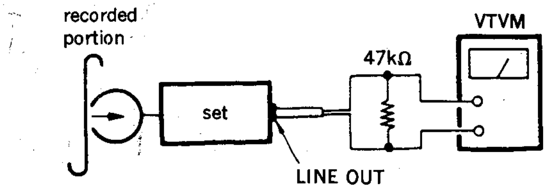
Test pin CNP901: short

Procedure :

1. Record Mode


AF OSC
attenuator
10kΩ
600Ω
set
blank tape
CS-123
CD IN
1) 315Hz
2) 10kHz
–26dB

2. Playback Mode


recorded portion
set
47kΩ
VTVM
LINE OUT

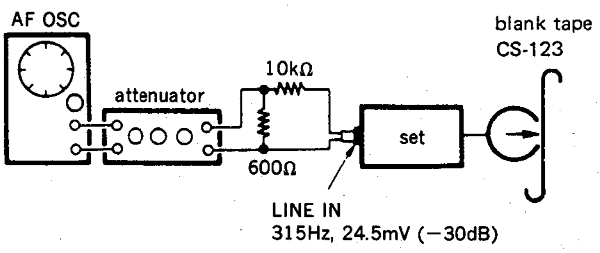
Playbck the signal recorded in step 1.
Confirm that the 10kHz playback output is 0±0.5dB relative to the 315Hz output. If necessary, adjust RV12(L-CH), RV22 (R-CH) and repeat the steps given above.

Adjustment Location : MD-B board

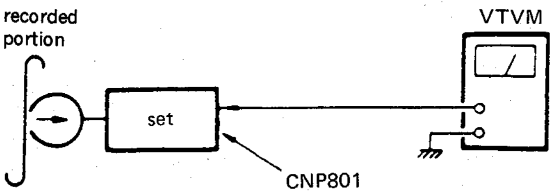
Record Level Adjustment **DECK B**

Setting :
REC LEVEL control: standard record position (Refer to page 4.)
Test pin CNP901: short

Procedure :
1. Record Mode


AF OSC
attenuator
10kΩ
600Ω
set
blank tape
CS-123
LINE IN
315Hz, 24.5mV (−30dB)

2. Playback Mode


recorded portion
set
VTVM
CNP801

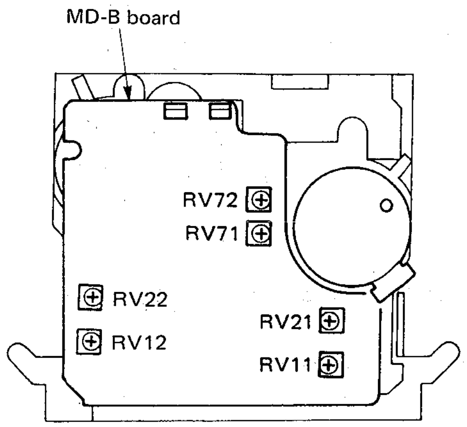
Confirm playback the tape recorded become adjustment level as follows.
If necessary, adjust RV701(L-CH), RV751(R-CH) and repeat steps 1 and 2.

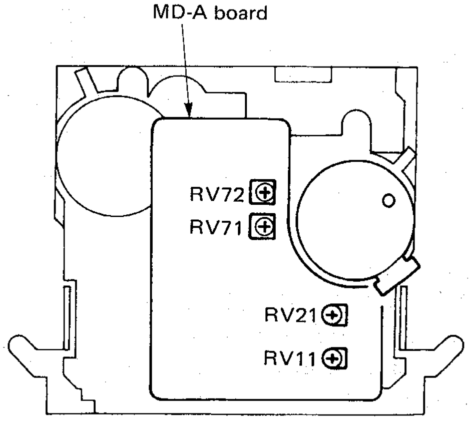
Adjustment Limits :

LINE OUT level: −22.7±0.5 dB

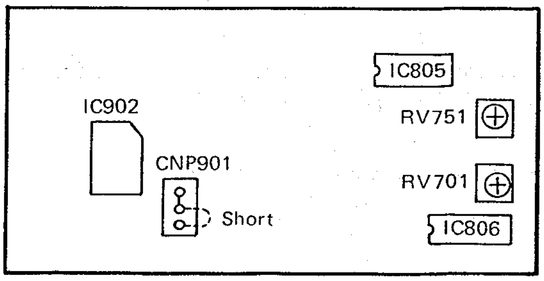
Adjustment Location : TC SIGNAL board

—Adjustment Parts Location Diagrams—


MD-B board
RV72
RV71
RV22
RV12
RV21
RV11


MD-A board
RV72
RV71
RV21
RV11

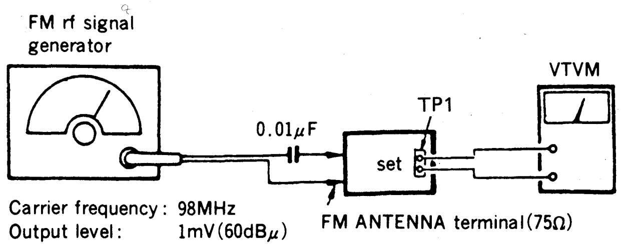
TC SIGNAL BOARD (Component Side)


IC805
IC902
RV751
CNP901
RV701
Short
IC806

TUNER SECTION

As FM FRONT-END FE301 is difficult to repair if faulty, replace it with new one.

FM NULL Adjustment

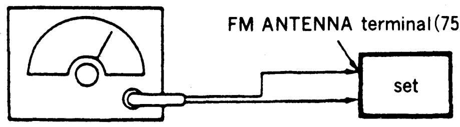

FM rf signal generator
VTVM
TP1
0.01μF
set
FM ANTENNA terminal(75Ω)

Carrier frequency: 98MHz
Output level: 1mV(60dBμ)
Modulation: 1kHz, 75kHz deviation

Procedure:

1. Tune the set to 98 MHz.
2. Adjust T301 for 0V reading on the VTVM.

FM Tuned Level Adjustment

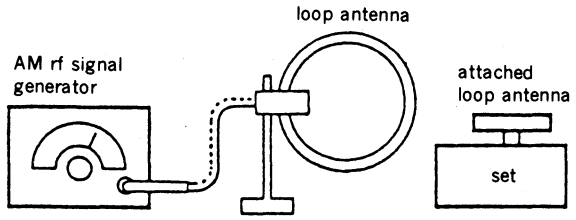

FM ANTENNA terminal(75Ω)
set

Carrier frequency: 98MHz
Output level: 0.018mV(25dBμ)
Modulation: 1kHz, 75kHz deviation

Procedure:

1. Tune the set to 98 MHz.
2. Adjust RV302 to the point where "TUNED" sign on FL601 just turns light.

- **AM SECTION**


loop antenna
AM rf signal generator
attached loop antenna
set

Carrier frequency: 216kHz
Modulation: 400Hz, 30% modulation

AM Tuned Level Adjustment

- **MW BAND**

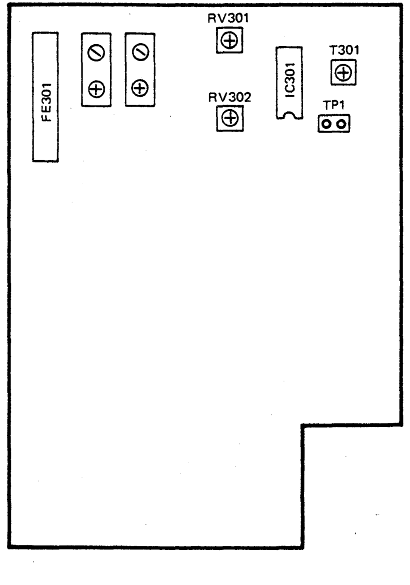
1. Set loop antenna input level to 0.56mV (78 dBμ/m) and no signal tuned light should not on.
2. Adjust RV301 to the point where "TUNED" sign on FL601 just turns light.

- **LW BAND**

1. Tune the set to 216kHz.
2. Confirm that the loop antenna input level of 2.5mV (80dBμ/m) and no signal should not auto stop.

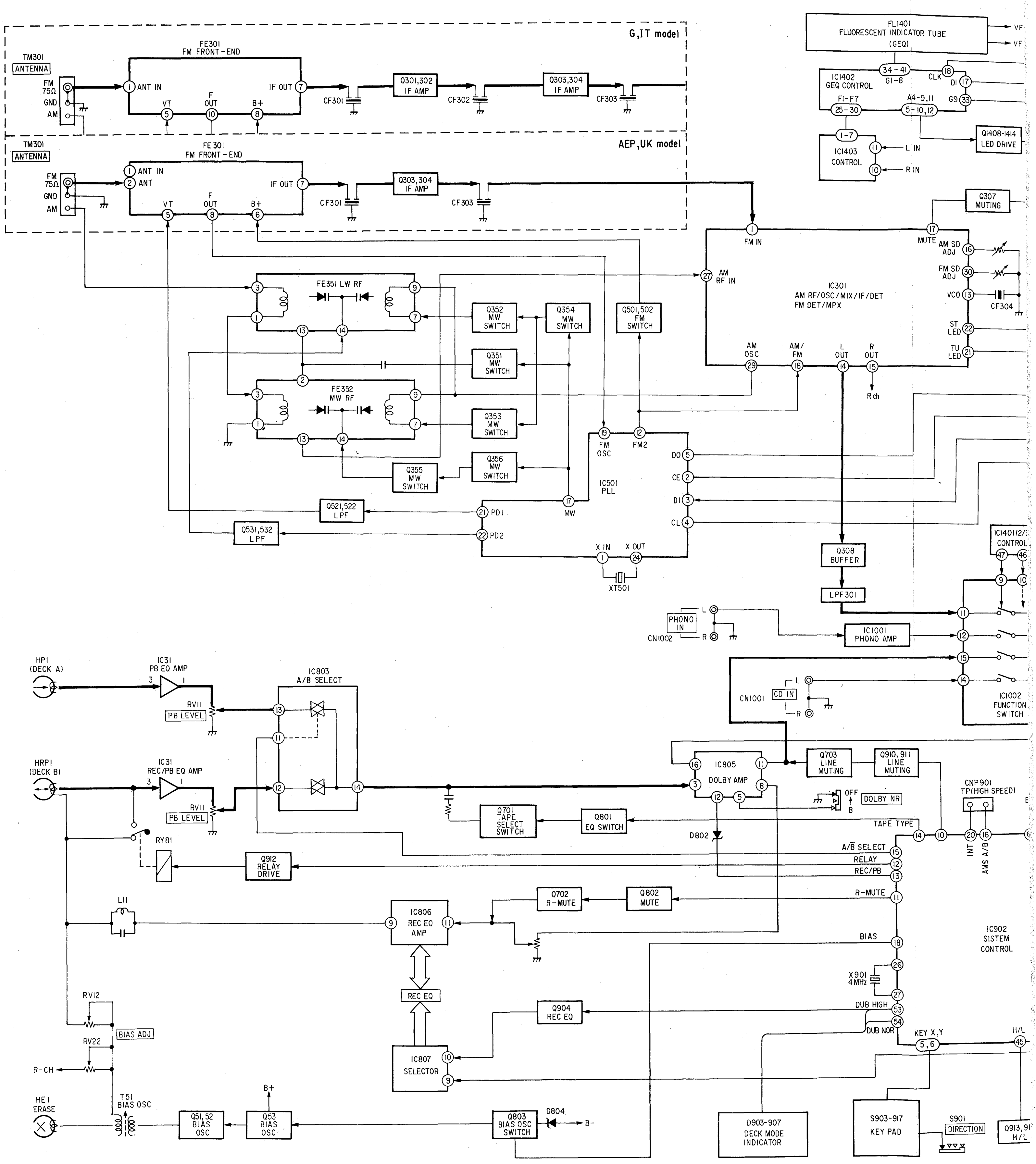
Adjustment Location:

MAIN BOARD (Component Side)

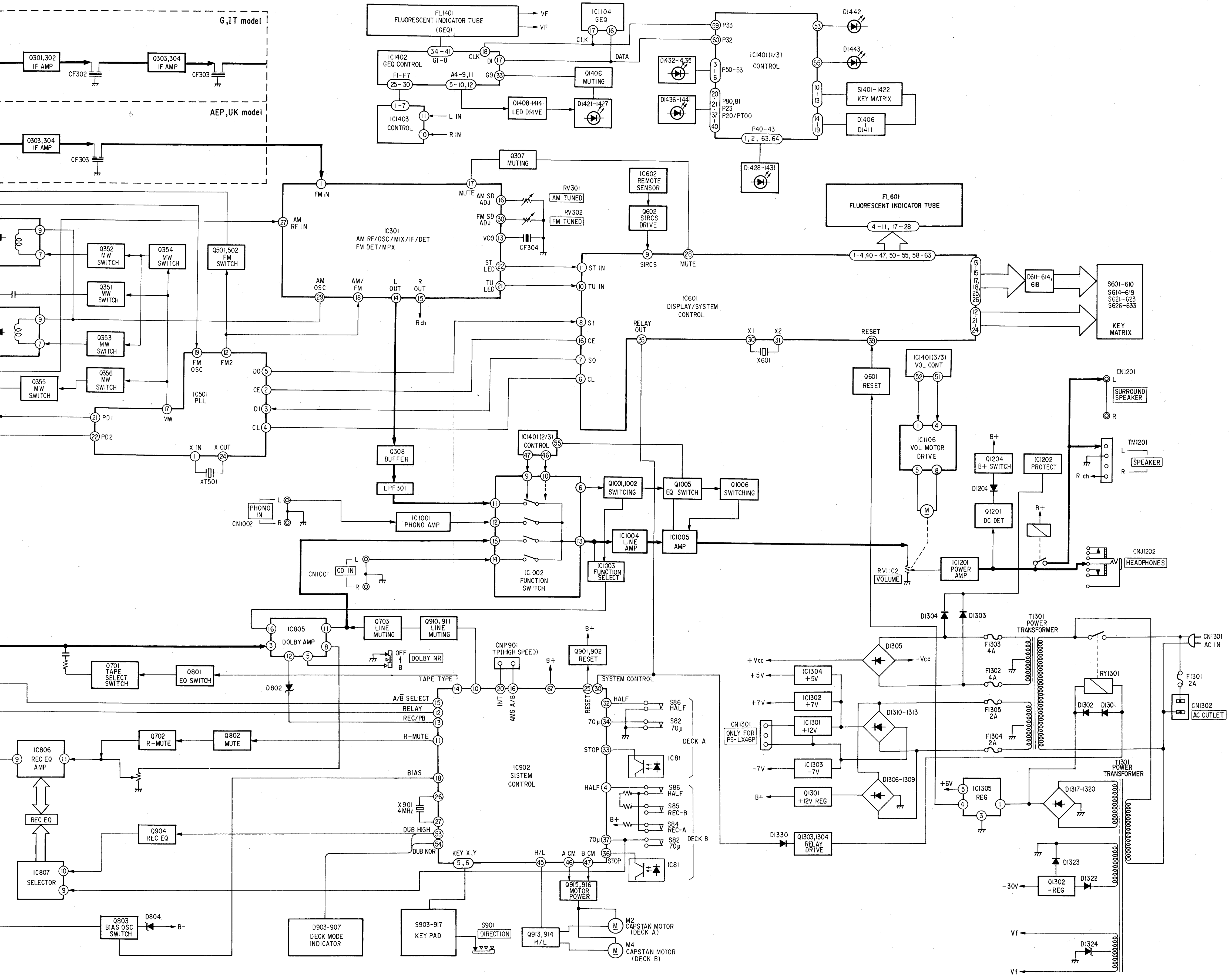

FE301
RV301
T301
IC301
RV302
TP1

SECTION 3
DIAGRAMS

3-1. BLOCK DIAGRAM

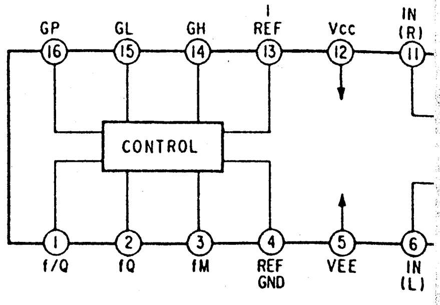

G,IT model
AEP,UK model
TM301
ANTENNA
FM 75Ω
GND
AM
FE301 FM FRONT-END
ANT IN
VT
F OUT
B+
IF OUT
CF301
Q301,302 IF AMP
CF302
Q303,304 IF AMP
CF303
FE351 LW RF
FE352 MW RF
Q351 MW SWITCH
Q352 MW SWITCH
Q353 MW SWITCH
Q354 MW SWITCH
Q355 MW SWITCH
Q356 MW SWITCH
Q501,502 FM SWITCH
Q521,522 LPF
Q531,532 LPF
IC501 PLL
FM OSC
FM2
MW
PD1
PD2
X IN
X OUT
XT501
DO
CE
DI
CL
FL1401 FLUORESCENT INDICATOR TUBE (GEQ)
IC1402 GEQ CONTROL
IC1403 CONTROL
Q1408-1414 LED DRIVE
Q307 MUTING
IC301 AM RF/OSC/MIX/IF/DET FM DET/MPX
FM IN
AM RF IN
AM OSC
AM/FM
L OUT
R OUT
R ch
MUTE
AM SD ADJ
FM SD ADJ
VCO
CF304
ST LED
TU LED
Q308 BUFFER
LPF301
PHONO IN
CN1002
IC1001 PHONO AMP
CN1001
CD IN
IC1002 FUNCTION SWITCH
HP1 (DECK A)
HRP1 (DECK B)
IC31 PB EQ AMP
IC31 REC/PB EQ AMP
RV11 PB LEVEL
RY81
IC803 A/B SELECT
IC805 DOLBY AMP
Q703 LINE MUTING
Q910,911 LINE MUTING
DOLBY NR
OFF
B
Q701 TAPE SELECT SWITCH
Q801 EQ SWITCH
D802
TAPE TYPE
A/B SELECT
RELAY
REC/PB
R-MUTE
BIAS
X901 4MHz
DUB HIGH
DUB NOR
KEY X,Y
Q912 RELAY DRIVE
L11
IC806 REC EQ AMP
Q702 R-MUTE
Q802 MUTE
REC EQ
Q904 REC EQ
IC807 SELECTOR
RV12
RV22
BIAS ADJ
R-CH
HE1 ERASE
T51 BIAS OSC
Q51,52 BIAS OSC
Q53 BIAS OSC
B+
Q803 BIAS OSC SWITCH
D804
B-
D903-907 DECK MODE INDICATOR
S903-917 KEY PAD
S901 DIRECTION
CNP901 TP(HIGH SPEED)
IC902 SISTEM CONTROL
INT
AMS A/B
H/L

CTION 3
GRAMS

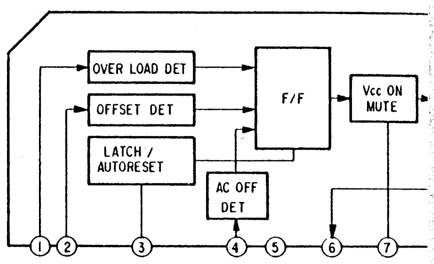

G,IT model
AEP,UK model
Q301,302 IF AMP
Q303,304 IF AMP
CF302
CF303
FL1401 FLUORESCENT INDICATOR TUBE (GEQ)
IC1402 GEQ CONTROL
IC1403 CONTROL
IC1104 GEQ
Q1406 MUTING
Q1408-1414 LED DRIVE
D1421-1427
IC1401(1/3) CONTROL
D1432-1435
D1436-1441
D1442
D1443
S1401-1422 KEY MATRIX
D1406 D1411
D1428-1431
FL601 FLUORESCENT INDICATOR TUBE
IC301 AM RF/OSC/MIX/IF/DET FM DET/MPX
Q307 MUTING
RV301 AM TUNED
RV302 FM TUNED
CF304
IC602 REMOTE SENSOR
Q602 SIRCS DRIVE
IC601 DISPLAY/SYSTEM CONTROL
D611-614, 618
S601-610 S614-619 S621-623 S626-633 KEY MATRIX
Q352 MW SWITCH
Q354 MW SWITCH
Q351 MW SWITCH
Q353 MW SWITCH
Q355 MW SWITCH
Q356 MW SWITCH
Q501,502 FM SWITCH
IC501 PLL
XT501
X601
Q601 RESET
IC1401(3/3) VOL CONT
IC1106 VOL MOTOR DRIVE
Q308 BUFFER
LPF301
IC1401(2/3) CONTROL
PHONO IN
CN1002
IC1001 PHONO AMP
CD IN
CN1001
IC1002 FUNCTION SWITCH
IC1003 FUNCTION SELECT
IC1004 LINE AMP
Q1001,1002 SWITCING
Q1005 EQ SWITCH
Q1006 SWITCHING
IC1005 AMP
RV1102 VOLUME
IC1201 POWER AMP
Q1204 B+ SWITCH
IC1202 PROTECT
Q1201 DC DET
D1204
CN1201
SURROUND SPEAKER
TM1201 SPEAKER
CNJ1202 HEADPHONES
IC805 DOLBY AMP
Q703 LINE MUTING
Q910,911 LINE MUTING
DOLBY NR
Q701 TAPE SELECT SWITCH
Q801 EQ SWITCH
D802
CNP901 TP(HIGH SPEED)
Q901,902 RESET
IC902 SISTEM CONTROL
X901 4MHz
S86 HALF
S82 70μ
DECK A
S85 REC-B
S84 REC-A
DECK B
IC81
Q702 R-MUTE
Q802 MUTE
IC806 REC EQ AMP
REC EQ
IC807 SELECTOR
Q904 REC EQ
Q803 BIAS OSC SWITCH
D804
D903-907 DECK MODE INDICATOR
S903-917 KEY PAD
S901 DIRECTION
Q913,914 H/L
Q915,916 MOTOR POWER
M2 CAPSTAN MOTOR (DECK A)
M4 CAPSTAN MOTOR (DECK B)
D1304
D1303
T1301 POWER TRANSFORMER
D1305
F1303 4A
F1302 4A
F1305 2A
F1304 2A
RY1301
D1302
D1301
F1301 2A
CN1301 AC IN
CN1302 AC OUTLET
IC1304 +5V
IC1302 +7V
IC1301 +12V
IC1303 -7V
Q1301 +12V REG
CN1301 ONLY FOR PS-LX46P
D1310-1313
D1306-1309
D1330
Q1303,1304 RELAY DRIVE
IC1305 REG
D1317-1320
D1323
Q1302 -REG
D1322
D1324

3-2. IC BLOCK DIAGRAMS

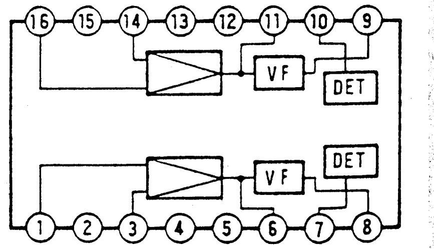
- **IC806 CXA1198AP**

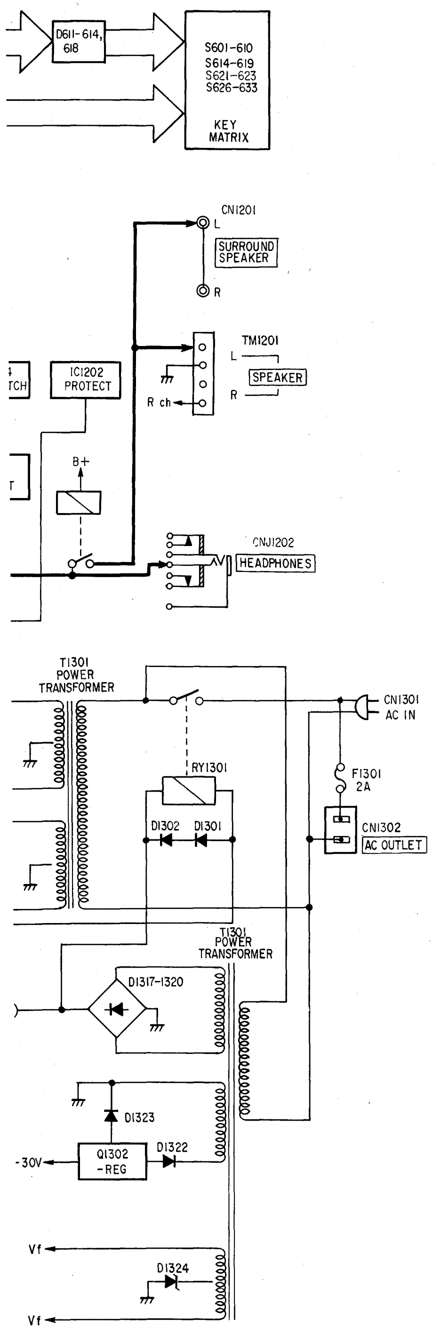

GP
GL
GH
REF
Vcc
IN (R)
CONTROL
f/Q
fQ
fM
REF GND
VEE
IN (L)

- **IC1202 μ1237HA**


OVER LOAD DET
OFFSET DET
LATCH / AUTORESET
F/F
Vcc ON MUTE
AC OFF DET

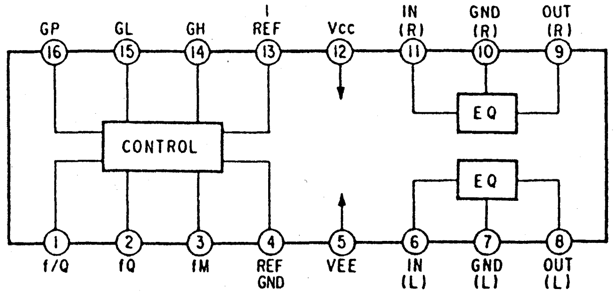
- **IC805 CXA1100P**


VF
DET
VF
DET

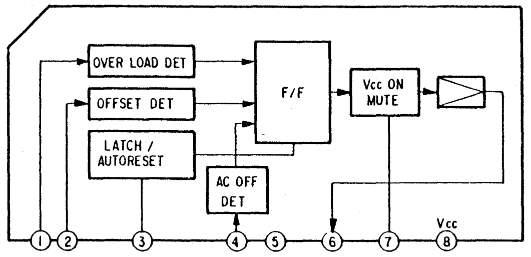

D611-614, 618
S601-610
S614-619
S621-623
S626-633
KEY MATRIX
CN1201
L
SURROUND SPEAKER
R
TM1201
L
SPEAKER
R
R ch
IC1202 PROTECT
TCH
B+
CNJ1202
HEADPHONES
T1301 POWER TRANSFORMER
CN1301 AC IN
RY1301
F1301 2A
D1302
D1301
CN1302
AC OUTLET
T1301 POWER TRANSFORMER
D1317-1320
D1323
Q1302 -REG
D1322
-30V
Vf
D1324
Vf

3-2. IC BLOCK DIAGRAMS

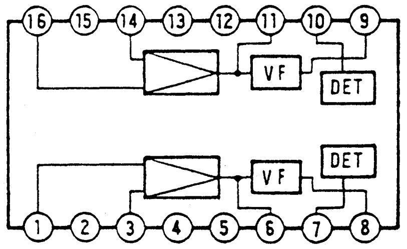
• IC806 CXA1198AP


GP
GL
GH
I REF
Vcc
IN (R)
GND (R)
OUT (R)
16
15
14
13
12
11
10
9
CONTROL
EQ
EQ
1
2
3
4
5
6
7
8
f/Q
fQ
fM
REF GND
VEE
IN (L)
GND (L)
OUT (L)

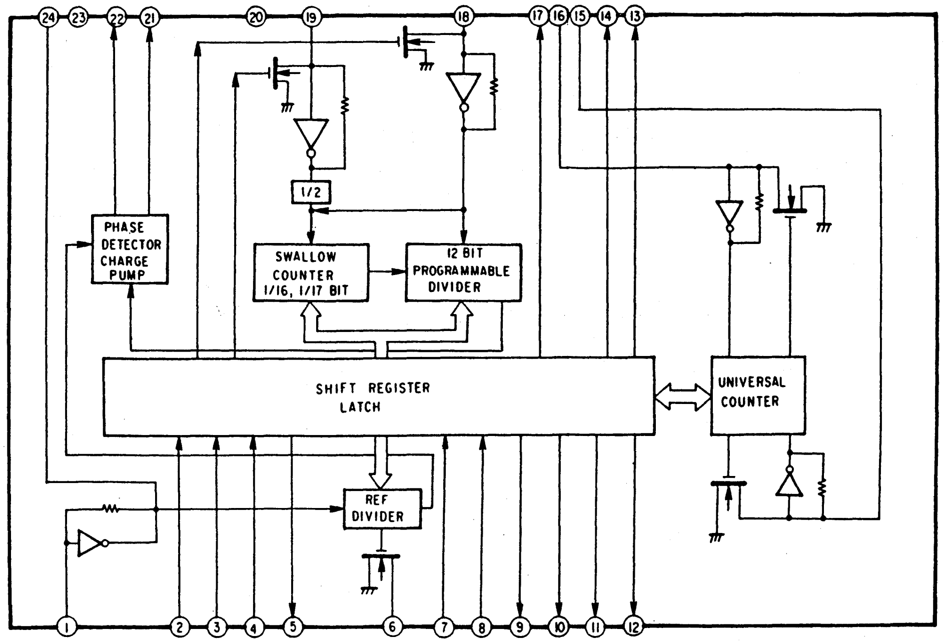
• IC1202 μ1237HA


OVER LOAD DET
OFFSET DET
LATCH / AUTORESET
F/F
Vcc ON MUTE
AC OFF DET
Vcc
1
2
3
4
5
6
7
8

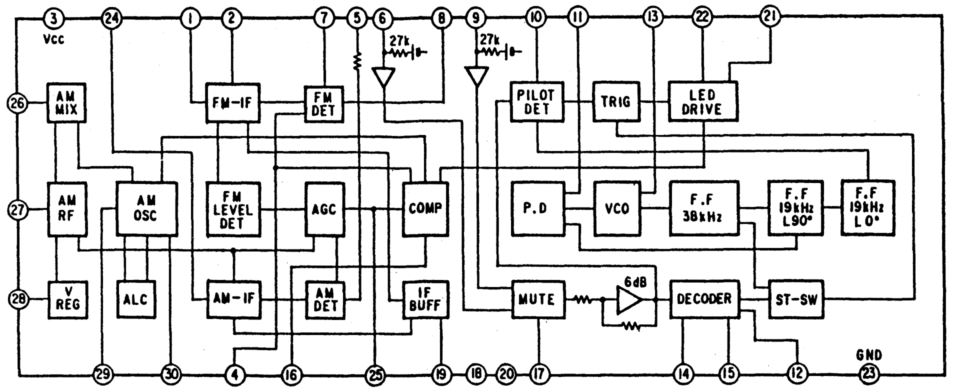
• IC805 CXA1100P


16
15
14
13
12
11
10
9
VF
DET
VF
DET
1
2
3
4
5
6
7
8

• IC501 LC7218

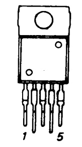

24
23
22
21
20
19
18
17
16
15
14
13
1/2
PHASE DETECTOR CHARGE PUMP
SWALLOW COUNTER 1/16, 1/17 BIT
12 BIT PROGRAMMABLE DIVIDER
SHIFT REGISTER LATCH
UNIVERSAL COUNTER
REF DIVIDER
1
2
3
4
5
6
7
8
9
10
11
12

• IC301 LA1851N

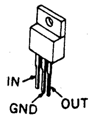

3
Vcc
24
1
2
7
5
6
27k
8
9
27k
10
11
13
22
21
26
27
28
AM MIX
AM RF
V REG
AM OSC
ALC
FM-IF
FM LEVEL DET
AM-IF
FM DET
AGC
AM DET
COMP
IF BUFF
PILOT DET
TRIG
LED DRIVE
P.D
VCO
F.F 38kHz
F.F 19kHz L90°
F.F 19kHz L0°
MUTE
6dB
DECODER
ST-SW
29
30
4
16
25
19
18
20
17
14
15
12
GND
23

3-3. SEMICONDUCTOR LEAD LAYOUTS

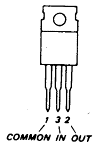
L78MR06



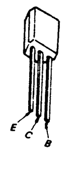
M5F7805L
M5F7807
M5F7812L



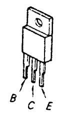
M5F7907


1 3 2
COMMON IN OUT

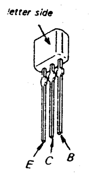
DTA114ES
DTA124ES
DTC114ES
DTC124ES
DTC143TS
2SC2669-OY
2SC3622A-LK



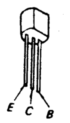
2SD2012



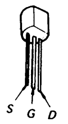
2SA1175-HFE
2SC2785-HFE


letter side
E C B

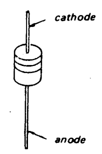
2SB1068-K
2SC945-P
2SC3112-B



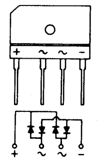
2SK246GR3



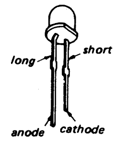
HZS6B1L
HZS7C2L
HZS30-1L
1N4148M
11ES2


cathode
anode

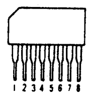
RBA-402



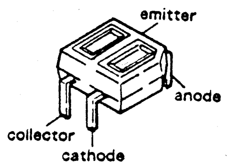
SEL2210S
SEL2410E-D
SEL2810A-C


long
short
anode
cathode

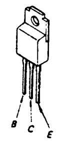
μPC1237HA



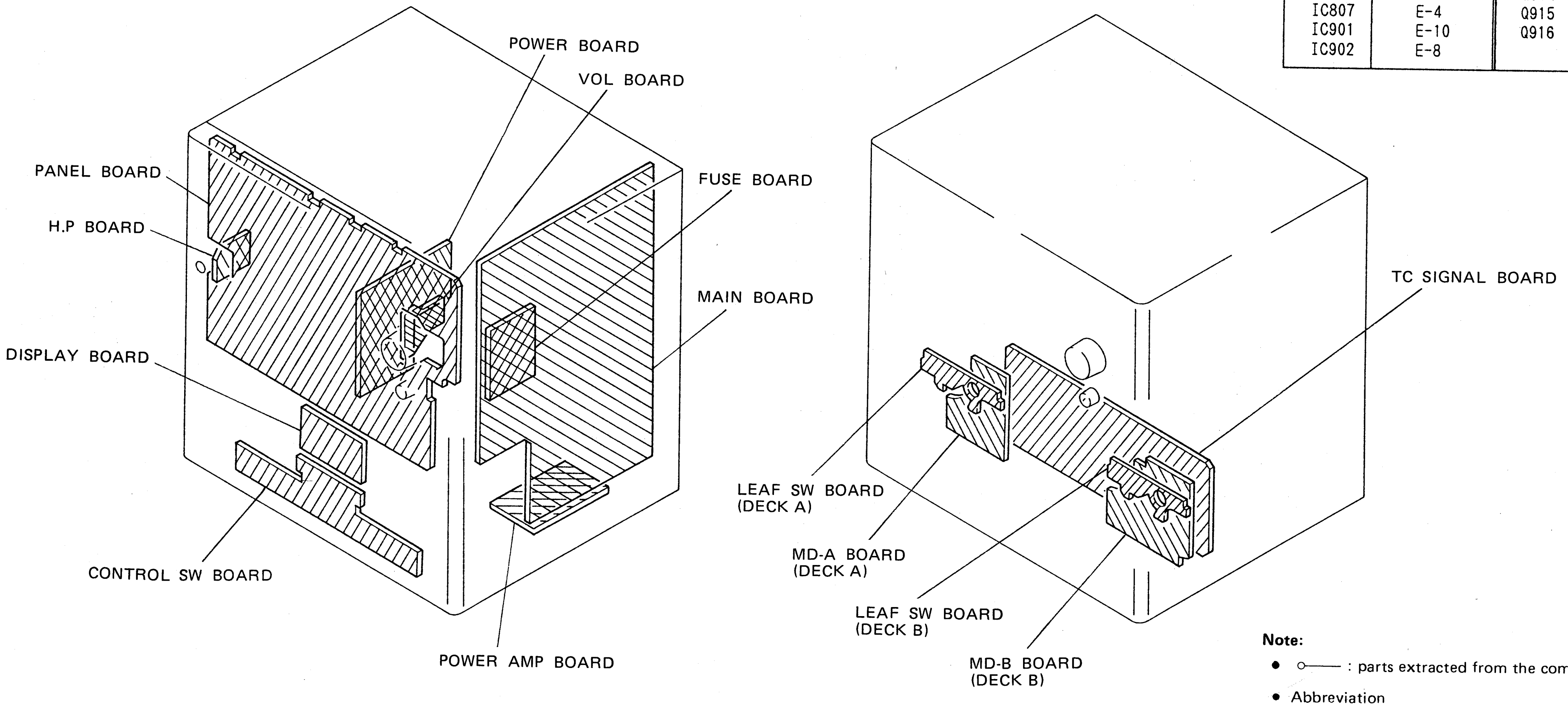
NJL5165K-B


emitter
anode
collector
cathode

2SB1375



3-4. CIRCUIT BOARD LOCATION


POWER BOARD
VOL BOARD
PANEL BOARD
FUSE BOARD
H.P BOARD
MAIN BOARD
DISPLAY BOARD
CONTROL SW BOARD
POWER AMP BOARD
TC SIGNAL BOARD
LEAF SW BOARD (DECK A)
MD-A BOARD (DECK A)
LEAF SW BOARD (DECK B)
MD-B BOARD (DECK B)

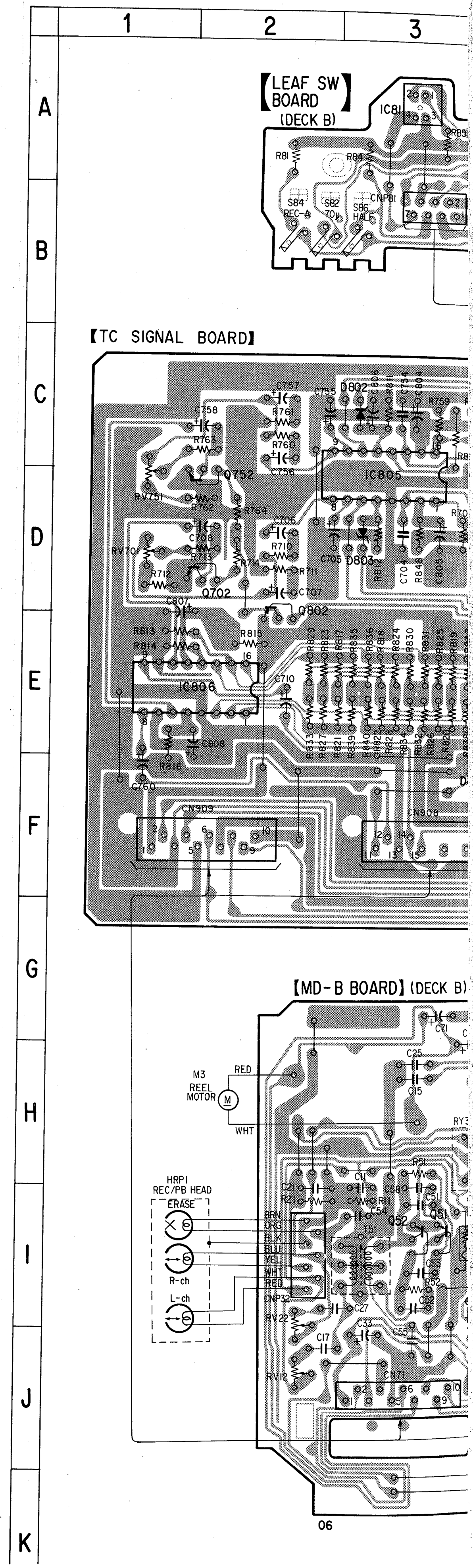
3-5. PRINTED WIRING BOARDS —TC SECTION—

- **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location
D31	H-4	Q51	I-3
D801	E-6	Q52	I-3
D802	C-3	Q53	J-4
D803	D-3	Q71	G-4 (MD-B)
D804	F-4	Q71	H-11 (MD-A)
D901	D-10	Q701	E-5
D902	D-10	Q702	D-2
D903	D-7 (TC)	Q703	D-6
D903	F-15 (DISPLAY)	Q751	D-5
D904	F-14	Q752	D-2
D905	F-14	Q753	D-6
D906	F-13	Q801	D-5
D907	F-14	Q802	D-2
D908	F-12	Q803	F-4
D909	F-13	Q901	F-8
D910	F-12	Q902	F-8
D911	F-13	Q903	D-8
D912	F-13	Q904	F-9
		Q905	D-8
IC31	I-10 (MD-A)	Q906	D-8
IC31	I-4 (MD-B)	Q907	D-7
IC81	A-8 (DECK A)	Q908	D-7
IC81	A-3 (DECK B)	Q910	D-7
IC801	E-5	Q911	D-7
IC803	F-5	Q912	E-7
IC805	D-3	Q913	D-10
IC806	E-1	Q914	D-10
IC807	E-4	Q915	C-10
IC901	E-10	Q916	C-10
IC902	E-8		

Note:
- ○—— : parts extracted from the component side.
- Abbreviation

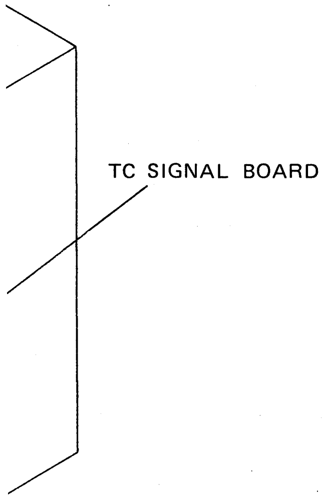
G: Germany model
IT: Italian model


1
2
3
A
B
C
D
E
F
G
H
I
J
K
【LEAF SW BOARD】 (DECK B)
【TC SIGNAL BOARD】
IC805
IC806
【MD-B BOARD】 (DECK B)
M3 REEL MOTOR
HRP1 REC/PB HEAD
ERASE
R-ch
L-ch
RED
WHT
06

PRINTED WIRING BOARDS
–TC SECTION–

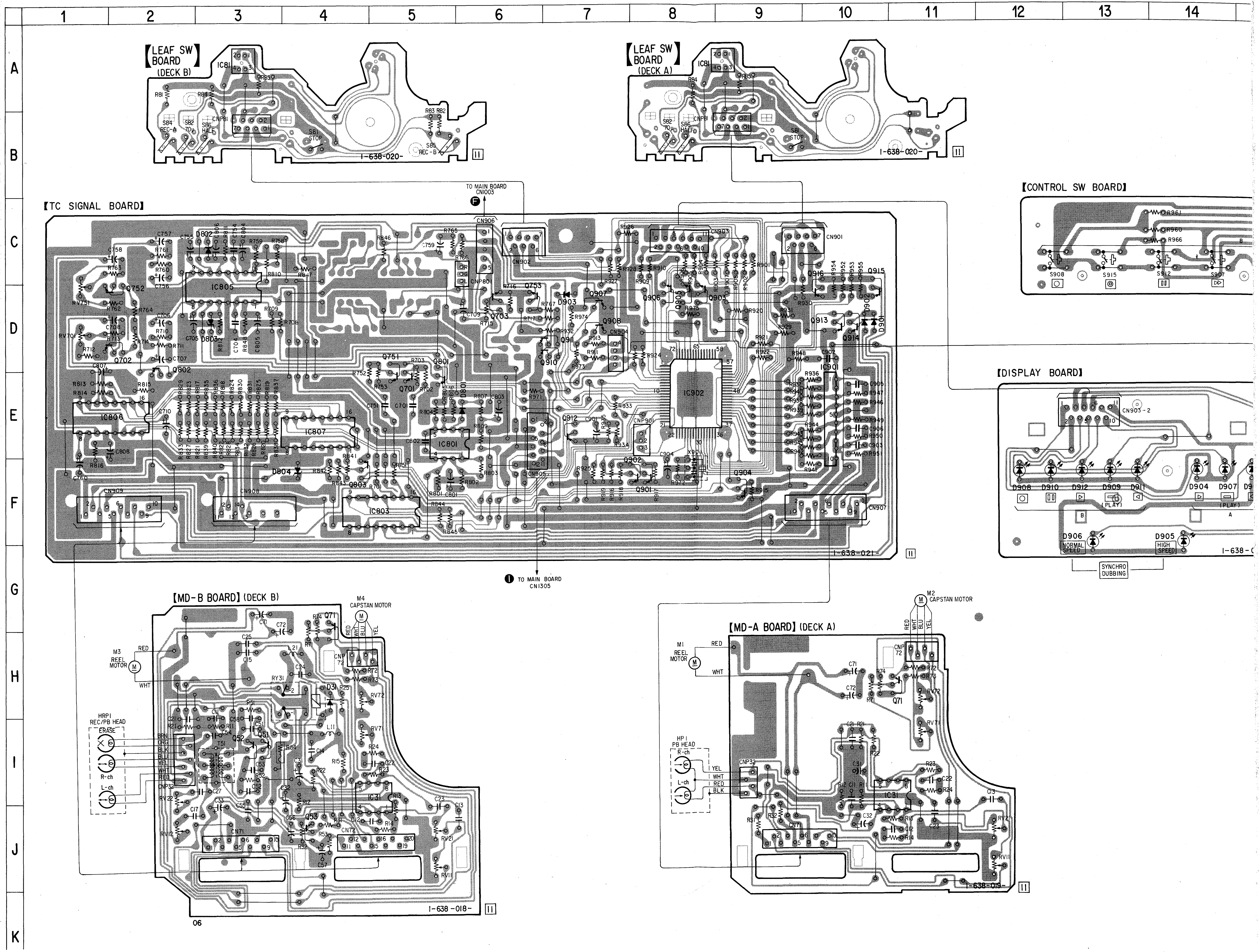
Semiconductor Location

ef. No.	Location	Ref. No.	Location
D31	H-4	Q51	I-3
D801	E-6	Q52	I-3
D802	C-3	Q53	J-4
D803	D-3	Q71	G-4 (MD-B)
D804	F-4	Q71	H-11 (MD-A)
D901	D-10	Q701	E-5
D902	D-10	Q702	D-2
D903	D-7 (TC)	Q703	D-6
D903	F-15 (DISPLAY)	Q751	D-5
D904	F-14	Q752	D-2
D905	F-14	Q753	D-6
D906	F-13	Q801	D-5
D907	F-14	Q802	D-2
D908	F-12	Q803	F-4
D909	F-13	Q901	F-8
D910	F-12	Q902	F-8
D911	F-13	Q903	D-8
D912	F-13	Q904	F-9
		Q905	D-8
IC31	I-10 (MD-A)	Q906	D-8
IC31	I-4 (MD-B)	Q907	D-7
IC81	A-8 (DECK A)	Q908	D-7
IC81	A-3 (DECK B)	Q910	D-7
IC801	E-5	Q911	D-7
IC803	F-5	Q912	E-7
IC805	D-3	Q913	D-10
IC806	E-1	Q914	D-10
IC807	E-4	Q915	C-10
IC901	E-10	Q916	C-10
IC902	E-8		

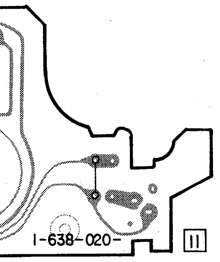

TC SIGNAL BOARD

——— : parts extracted from the component side.

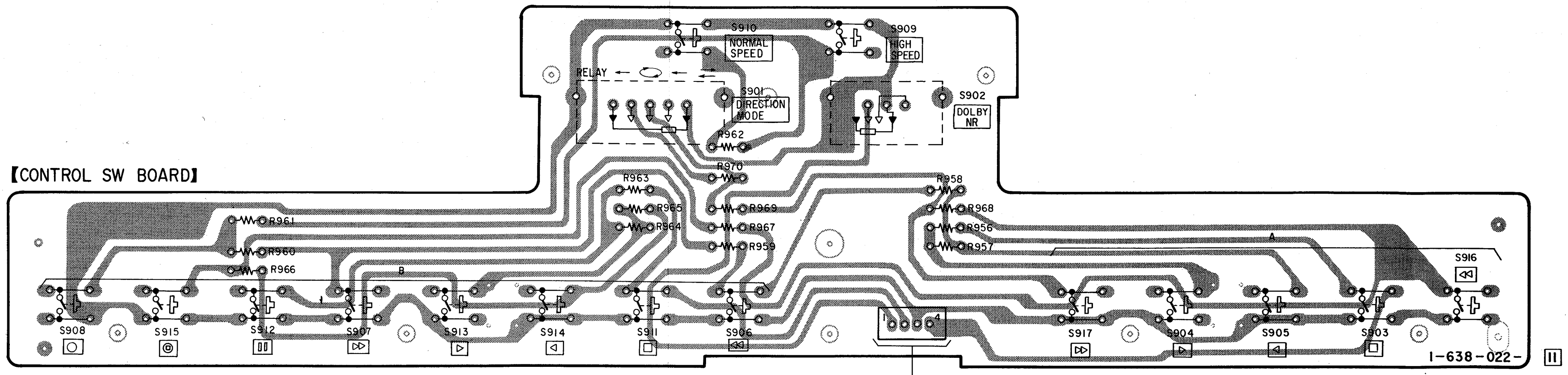
breviation
Germany model
Italian model

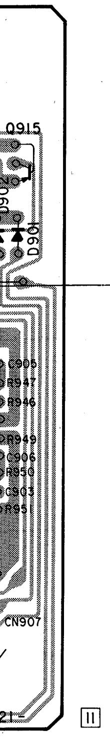

1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
J
K
【LEAF SW BOARD】 (DECK B)
【LEAF SW BOARD】 (DECK A)
IC81
S84 REC-A
S82 TO
S86 HALF
S81 STOP
S85 REC-B
CNP81
1-638-020-
【TC SIGNAL BOARD】
TO MAIN BOARD CN1003
F
CN906
CN902
CN903
CN901
CNP801
CN904
CN909
CN908
CN905
CN907
CNP901
IC805
IC806
IC807
IC801
IC803
IC901
IC902
1-638-021-
TO MAIN BOARD CN1305
【CONTROL SW BOARD】
S908
S915
S912
S907
【DISPLAY BOARD】
CN903-2
D908
D910
D912
D909
D911
D904
D907
(PLAY)
B
A
D906 NORMAL SPEED
D905 HIGH SPEED
SYNCHRO DUBBING
1-638-
【MD-B BOARD】 (DECK B)
M4 CAPSTAN MOTOR
M3 REEL MOTOR
RED
WHT
YEL
BLU
HRP1 REC/PB HEAD
ERASE
R-ch
L-ch
BRN
ORG
BLK
CNP32
CNP72
CN71
CN72
IC31
1-638-018-
06
【MD-A BOARD】 (DECK A)
M2 CAPSTAN MOTOR
M1 REEL MOTOR
HP1 PB HEAD
1-638-019-
II

11 12 13 14 15 16 17 18 19 20 21 22

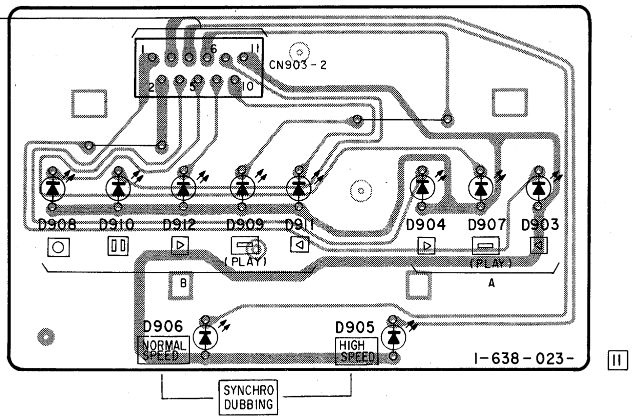


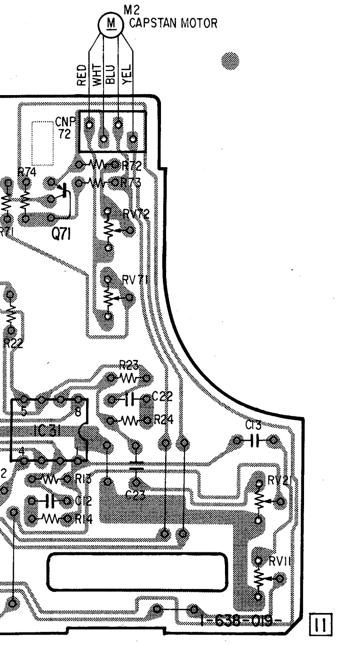
【CONTROL SW BOARD】


S910
NORMAL SPEED
S909
HIGH SPEED
RELAY
S901
DIRECTION MODE
S902
DOLBY NR
R962
R970
R963
R965
R964
R969
R967
R959
R958
R968
R956
R957
R961
R960
R966
B
A
S916
S908
S915
S912
S907
S913
S914
S911
S906
S917
S904
S905
S903
1
4
1-638-022-
II


Q915
D902
D901
C905
R947
R946
R949
C906
R950
C903
R951
CN907
21-
II

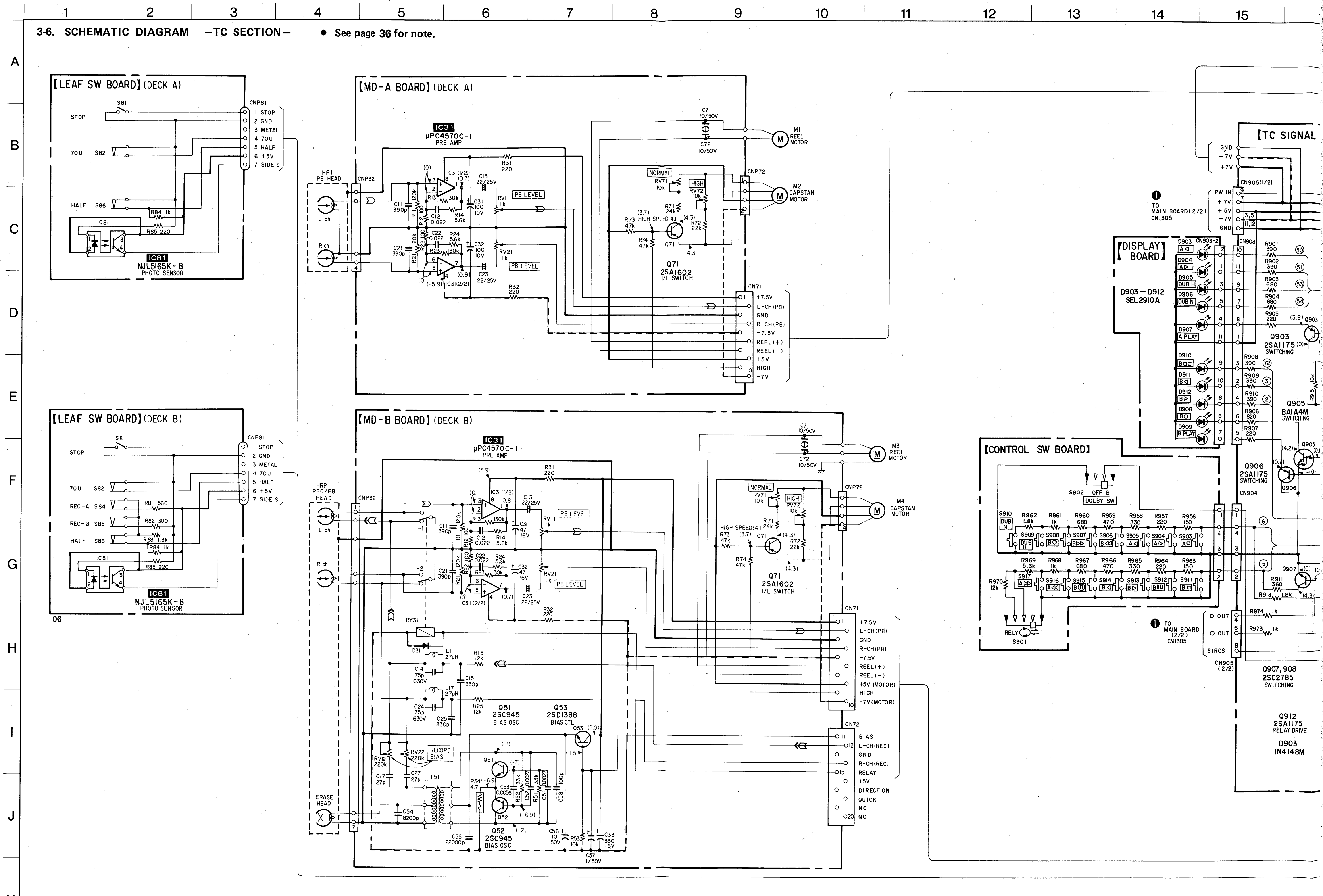
【DISPLAY BOARD】

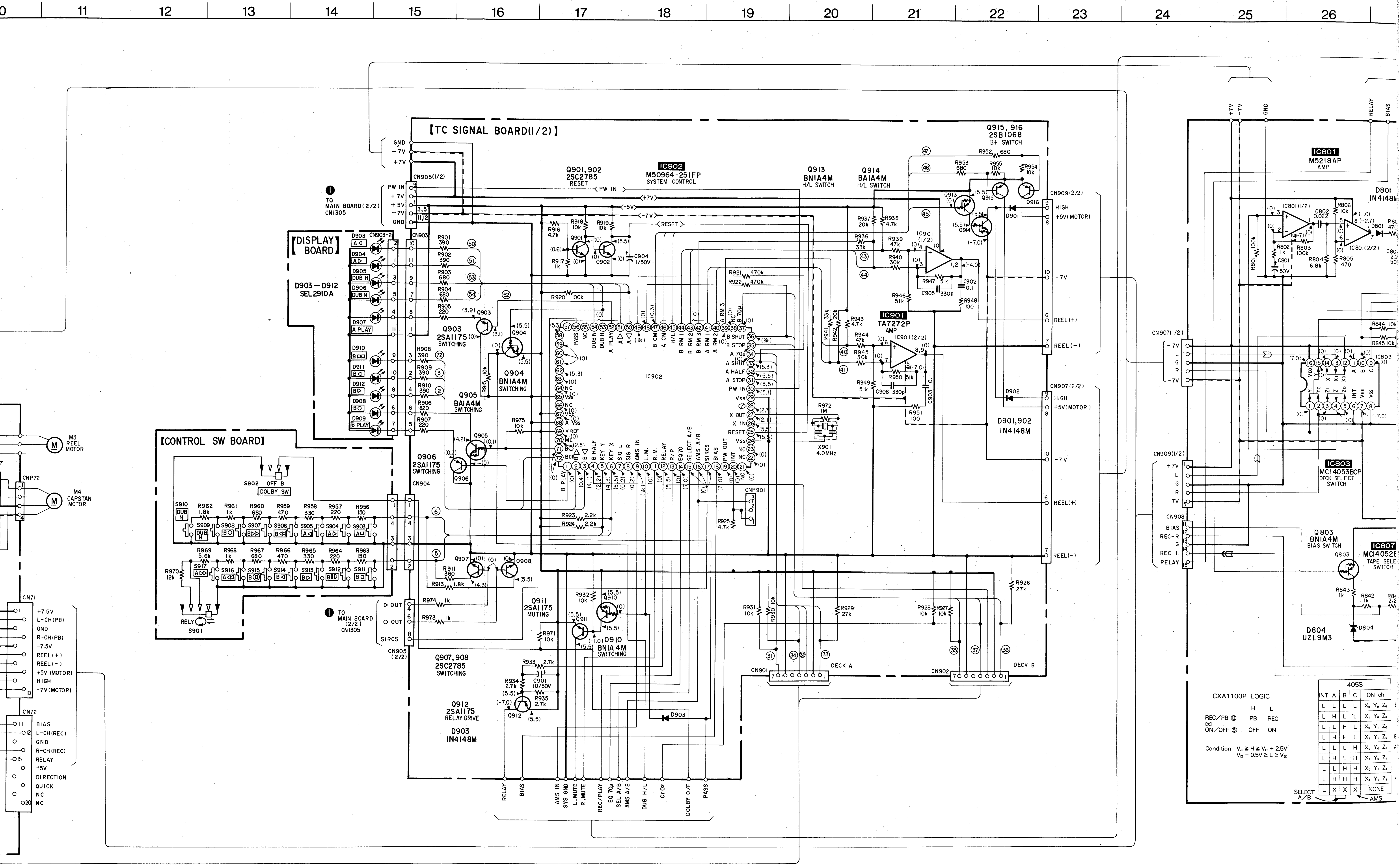

1
2
5
6
10
11
CN903-2
D908
D910
D912
D909
D911
D904
D907
D903
(PLAY)
(PLAY)
B
A
D906
NORMAL SPEED
D905
HIGH SPEED
1-638-023-
II
SYNCHRO DUBBING


M2
CAPSTAN MOTOR
M
RED
WHT
BLU
YEL
CNP 72
R74
R72
R73
Q71
RV72
RV71
R22
R23
C22
R24
IC31
C13
R13
C12
R14
C23
R12
RV11
1-638-019-
II

3-6. SCHEMATIC DIAGRAM —TC SECTION—

- **See page 36 for note.**


【LEAF SW BOARD】(DECK A)
S81
STOP
70U S82
HALF S86
IC81
R84 1k
R85 220
IC81
NJL5165K-B
PHOTO SENSOR
CNP81
1 STOP
2 GND
3 METAL
4 70U
5 HALF
6 +5V
7 SIDE S
【MD-A BOARD】(DECK A)
IC31
μPC4570C-1
PRE AMP
HP1
PB HEAD
L ch
R ch
CNP32
C11 390p
C21 390p
IC31(1/2)
IC31(2/2)
R13 130k
R23 130k
C12 0.022
C22 0.022
R14 5.6k
R24 5.6k
C13 22/25V
C23 22/25V
C31 100 10V
C32 100 10V
R31 220
R32 220
RV11 1k
RV21 1k
PB LEVEL
C71 10/50V
C72 10/50V
M1 REEL MOTOR
CNP72
M2 CAPSTAN MOTOR
NORMAL
RV71 10k
HIGH
RV72 10k
R71 24k
R72 22k
R73 47k
R74 47k
HIGH SPEED 4.1
Q71
2SA1602
H/L SWITCH
CN71
+7.5V
L-CH(PB)
GND
R-CH(PB)
-7.5V
REEL(+)
REEL(-)
+5V
HIGH
-7V
【LEAF SW BOARD】(DECK B)
S81
STOP
70U S82
REC-A S84
REC-B S85
HALF S86
R81 560
R82 300
R83 1.3k
R84 1k
R85 220
IC81
NJL5165K-B
PHOTO SENSOR
06
【MD-B BOARD】(DECK B)
IC31
μPC4570C-1
PRE AMP
HRP1
REC/PB
HEAD
ERASE HEAD
RY31
D31
L11 27μH
L17 27μH
C14 75p 630V
C24 75p 630V
C15 330p
C25 330p
R15 12k
R25 12k
RV12 220k
RV22 220k
RECORD BIAS
C17 27p
C27 27p
T51
C54 8200p
C55 22000p
Q51
2SC945
BIAS OSC
Q52
2SC945
BIAS OSC
Q53
2SD1388
BIAS CTL
R54 4.7
C53 0.0056
R52 33k
R51 33k
C52 0.0027
C51 0.0027
C58 100p
C56 10 50V
R53 10k
C57 1/50V
C33 330 16V
C31 47 16V
C32 47 16V
M3 REEL MOTOR
M4 CAPSTAN MOTOR
HIGH SPEED 4.1
Q71
2SA1602
H/L SWITCH
CN71
+7.5V
L-CH(PB)
GND
R-CH(PB)
-7.5V
REEL(+)
REEL(-)
+5V (MOTOR)
HIGH
-7V (MOTOR)
CN72
BIAS
L-CH(REC)
GND
R-CH(REC)
RELAY
+5V
DIRECTION
QUICK
NC
NC
【TC SIGNAL
GND
-7V
+7V
CN905(1/2)
TO MAIN BOARD (2/2) CN1305
PW IN
+7V
+5V
-7V
GND
【DISPLAY】BOARD
D903 – D912
SEL2910A
CN903-2
CN903
D903 A◁
D904 A▷
D905 DUB H
D906 DUB N
D907 A PLAY
D910
D911 B◁
D912 B▷
D908 B□
D909 B PLAY
R901 390
R902 390
R903 680
R904 680
R905 220
R908 390
R909 390
R910 390
R906 820
R907 220
Q903
2SA1175
SWITCHING
Q905
BA1A4M
SWITCHING
Q906
2SA1175
SWITCHING
R915 10k
【CONTROL SW BOARD】
S902 OFF B
DOLBY SW
S910 DUB N
S909 DUB H
S908
S907
S906
S905
S904
S903
S917
S916
S915
S914
S913
S912
S911
R962 1.8k
R961 1k
R960 680
R959 470
R958 330
R957 220
R956 150
R969 5.6k
R968 1k
R967 680
R966 470
R965 330
R964 220
R963 150
R970 12k
RELY
S901
CN904
TO MAIN BOARD (2/2) CN1305
▷ OUT
○ OUT
SIRCS
CN905 (2/2)
R911 360
R913 1.8k
R974 1k
R973 1k
Q907
Q907, 908
2SC2785
SWITCHING
Q912
2SA1175
RELAY DRIVE
D903
1N4148M


11
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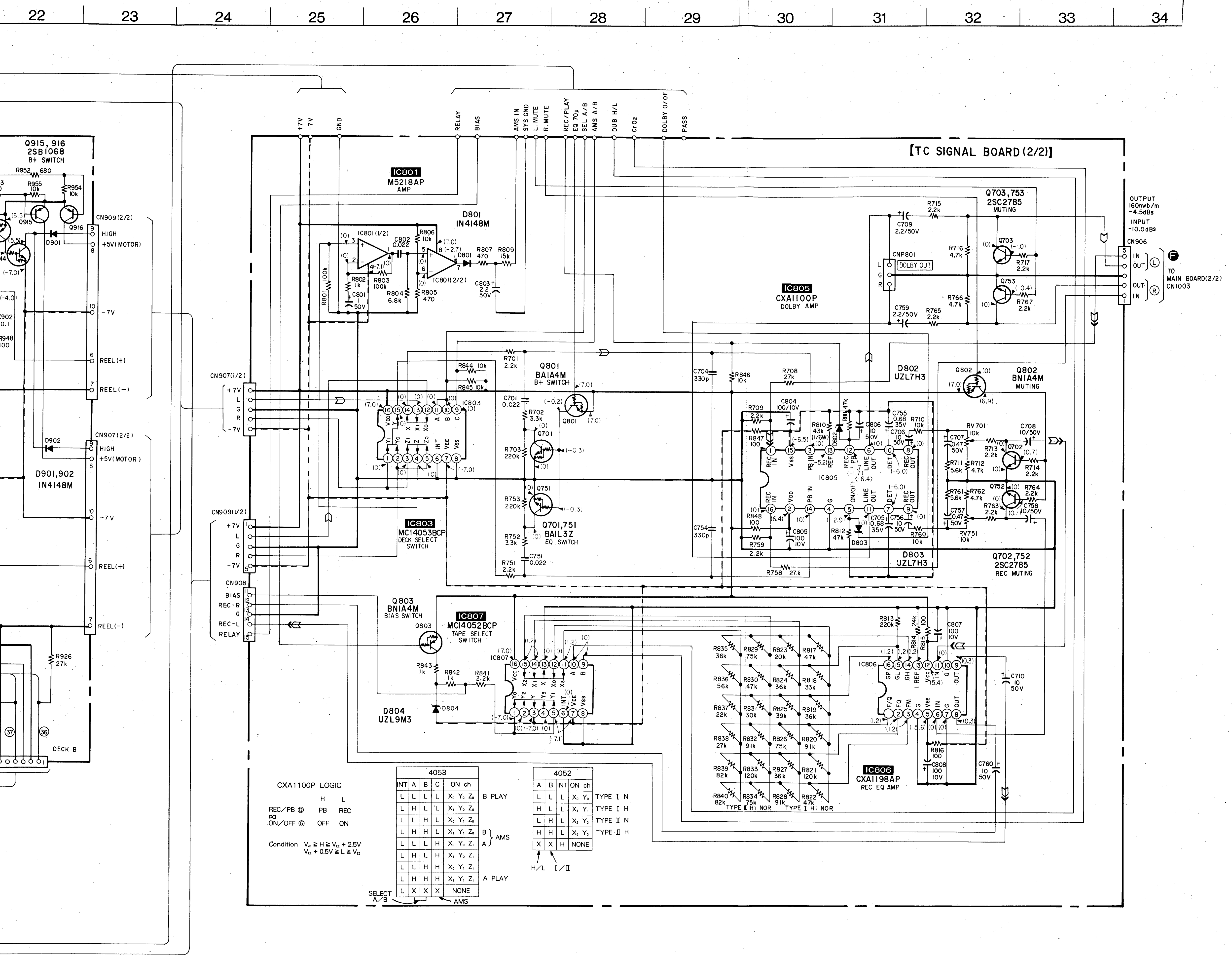
25
26
【TC SIGNAL BOARD(1/2)】
【DISPLAY BOARD】
【CONTROL SW BOARD】
D903 – D912
SEL2910A
IC902
M50964-251FP
SYSTEM CONTROL
Q901, 902
2SC2785
RESET
Q913
BN1A4M
H/L SWITCH
Q914
BA1A4M
H/L SWITCH
Q915, 916
2SB1068
B+ SWITCH
IC901
TA7272P
AMP
IC801
M5218AP
AMP
D801
1N4148M
IC803
MC14053BCP
DECK SELECT SWITCH
IC807
MC14052B
TAPE SELECT SWITCH
Q803
BN1A4M
BIAS SWITCH
D804
UZL9M3
Q903
2SA1175
SWITCHING
Q904
BN1A4M
SWITCHING
Q905
BA1A4M
SWITCHING
Q906
2SA1175
SWITCHING
Q907, 908
2SC2785
SWITCHING
Q911
2SA1175
MUTING
Q910
BN1A4M
SWITCHING
Q912
2SA1175
RELAY DRIVE
D903
1N4148M
D901, 902
1N4148M
X901
4.0MHz
TO MAIN BOARD (2/2) CN1305
M3 REEL MOTOR
M4 CAPSTAN MOTOR
CNP72
CN71
+7.5V
L-CH(PB)
GND
R-CH(PB)
-7.5V
REEL(+)
REEL(-)
+5V (MOTOR)
HIGH
-7V(MOTOR)
CN72
BIAS
L-CH(REC)
GND
R-CH(REC)
RELAY
+5V
DIRECTION
QUICK
NC
NC
CN905(1/2)
PW IN
+7V
+5V
-7V
GND
CN905(2/2)
OUT
OUT
SIRCS
CN903
CN904
CN909(2/2)
HIGH
+5V(MOTOR)
-7V
REEL(+)
REEL(-)
CN907(2/2)
CN907(1/2)
CN909(1/2)
CN908
BIAS
REC-R
G
REC-L
RELAY
CN901
DECK A
CN902
DECK B
CNP901
S902 OFF B DOLBY SW
RELY S901
RELAY
BIAS
AMS IN
SYS GND
L.MUTE
R.MUTE
REC/PLAY
EQ 70μ
SEL A/B
AMS A/B
DUB H/L
CrO2
DOLBY O/F
PASS
CXA1100P LOGIC
H L
REC/PB ⑫ PB REC
ON/OFF ⑤ OFF ON
Condition Vcc ≧ H ≧ Vcc + 2.5V
Vcc + 0.5V ≧ L ≧ Vcc
4053
INT A B C ON ch
SELECT A/B
AMS


22
23
24
25
26
27
28
29
30
31
32
33
34
【TC SIGNAL BOARD (2/2)】
Q915, 916
2SB1068
B+ SWITCH
D901, 902
1N4148M
DECK B
CN909(2/2)
HIGH
+5V(MOTOR)
-7V
REEL(+)
REEL(−)
CN907(2/2)
CN907(1/2)
CN909(1/2)
CN908
BIAS
REC-R
G
REC-L
RELAY
+7V
-7V
GND
RELAY
BIAS
AMS IN
SYS GND
L. MUTE
R. MUTE
REC/PLAY
EQ 70μ
SEL A/B
AMS A/B
DUB H/L
CrO2
DOLBY O/OF
PASS
IC801
M5218AP
AMP
D801
1N4148M
IC803
MC14053BCP
DECK SELECT SWITCH
Q801
BA1A4M
B+ SWITCH
Q701, 751
BA1L3Z
EQ SWITCH
IC805
CXA1100P
DOLBY AMP
CNP801
DOLBY OUT
D802
UZL7H3
D803
UZL7H3
Q802
BN1A4M
MUTING
Q703, 753
2SC2785
MUTING
Q702, 752
2SC2785
REC MUTING
OUTPUT
160nwb/m
-4.5dBs
INPUT
-10.0dBs
CN906
TO MAIN BOARD(2/2)
CN1003
Q803
BN1A4M
BIAS SWITCH
IC807
MC14052BCP
TAPE SELECT SWITCH
D804
UZL9M3
IC806
CXA1198AP
REC EQ AMP
TYPE II HI NOR
TYPE I HI NOR

CXA1100P LOGIC

	H	L
REC/PB ⑫	PB	REC
ᗡᗡ ON/OFF ⑤	OFF	ON

Condition $V_{cc} \geqq H \geqq V_{EE} + 2.5V$
$V_{EE} + 0.5V \geqq L \geqq V_{EE}$

4053					
INT	A	B	C	ON ch	
L	L	L	L	X_0 Y_0 Z_0	B PLAY
L	H	L	L	X_1 Y_0 Z_0	
L	L	H	L	X_0 Y_1 Z_0	
L	H	H	L	X_1 Y_1 Z_0	B } AMS
L	L	L	H	X_0 Y_0 Z_1	A } AMS
L	H	L	H	X_1 Y_0 Z_1	
L	L	H	H	X_0 Y_1 Z_1	
L	H	H	H	X_1 Y_1 Z_1	A PLAY
L	X	X	X	NONE	

SELECT A/B　AMS

4052				
A	B	INT	ON ch	
L	L	L	X_0 Y_0	TYPE I N
H	L	L	X_1 Y_1	TYPE I H
L	H	L	X_2 Y_2	TYPE II N
H	H	L	X_3 Y_3	TYPE II H
X	X	H	NONE	

H/L　I/II

3-7. PRINTED WIRING BOARDS
—MAIN SECTION—

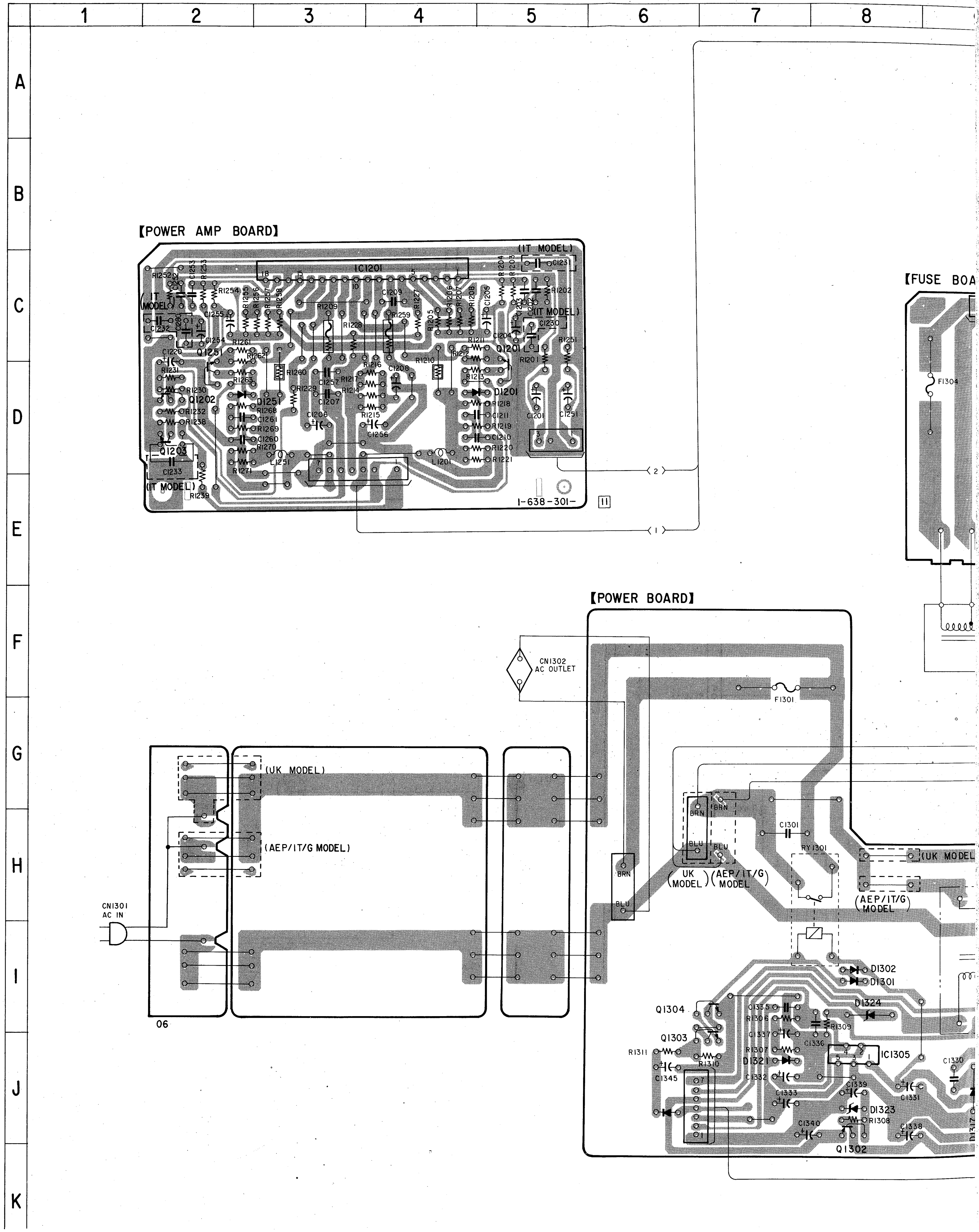
- **Semiconductor Location**

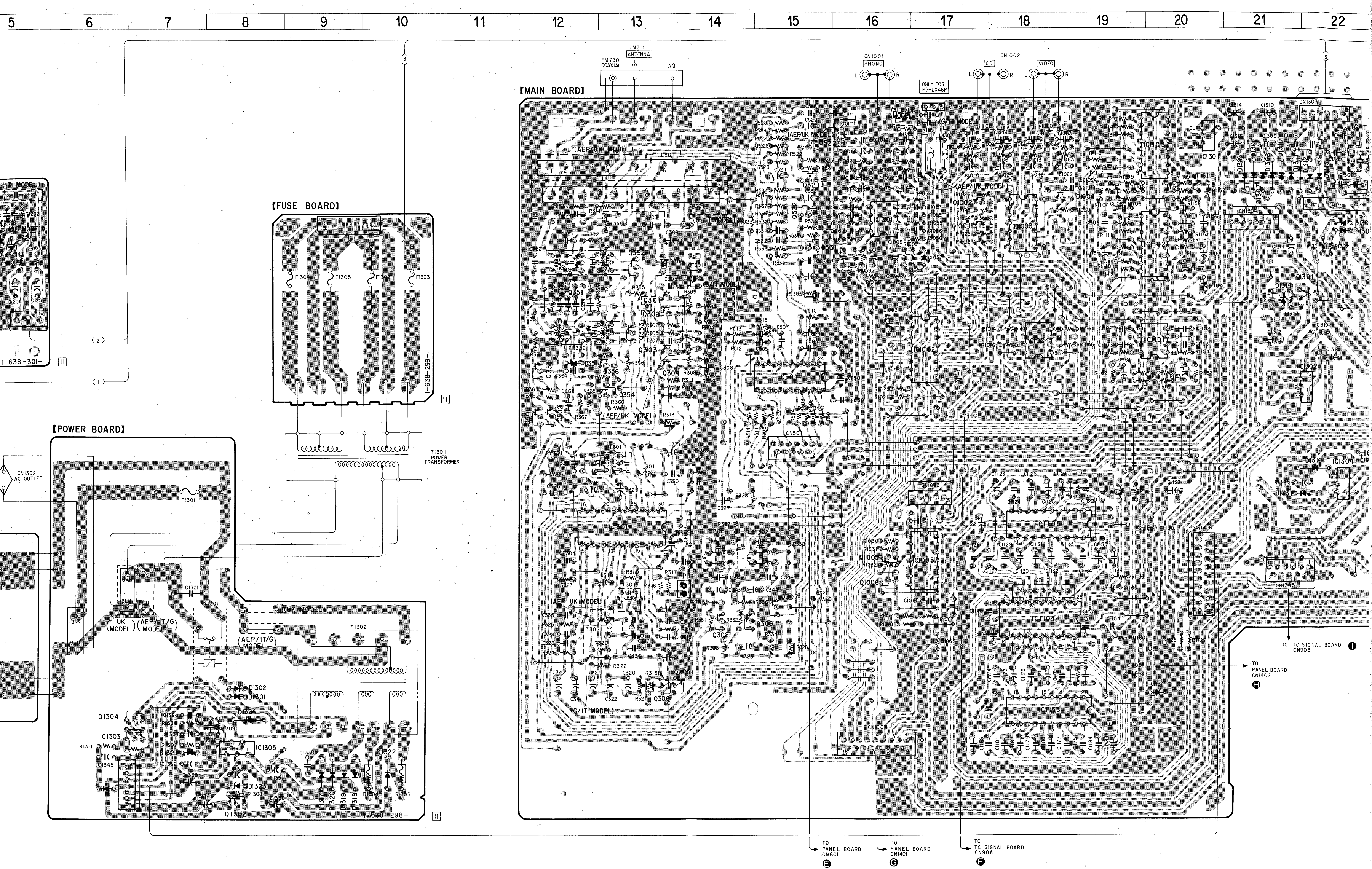
Ref. No.	Location	Ref. No.	Location
D351	E-12	IC1201	C-3
D1201	C-5	IC1202	E-24
D1202	B-24	IC1301	B-20
D1203	B-24	IC1302	E-22
D1204	F-23	IC1303	G-23
D1251	C-2	IC1304	F-22
D1301	I-8	IC1305	J-8
D1302	I-8		
D1303	C-22	Q301	D-13
D1304	C-22	Q302	D-13
D1305	C-23	Q303	E-13
D1306	B-21	Q304	E-13
D1307	C-21	Q305	I-14
D1308	B-21	Q306	I-13
D1309	B-21	Q307	H-15
D1310	B-21	Q308	H-14
D1311	B-21	Q309	H-15
D1312	B-22	Q351	D-12
D1313	B-22	Q352	C-13
D1314	D-21	Q353	D-13
D1315	G-23	Q354	E-13
D1316	F-22	Q355	E-12
D1317	J-9	Q356	E-13
D1318	J-9	Q501	E-12
D1319	J-9	Q502	E-12
D1320	J-9	Q521	C-15
D1321	J-7	Q522	B-15
D1322	J-10	Q531	C-15
D1323	J-8	Q532	C-15
D1324	I-8	Q1001	C-17
D1330	J-6	Q1002	C-17
D1331	F-21	Q1004	C-19
		Q1005	G-16
IC301	G-13	Q1006	H-16
IC501	E-15	Q1101	B-19
IC1001	C-16	Q1151	B-20
IC1002	E-17	Q1201	C-5
IC1003	C-18	Q1202	D-2
IC1004	H-18	Q1203	D-2
IC1005	G-17	Q1204	F-24
IC1101	E-20	Q1251	C-2
IC1102	C-20	Q1301	D-22
IC1103	B-20	Q1302	K-8
IC1104	E-18	Q1303	J-6
IC1105	G-18	Q1304	I-6
IC1155	I-18		

Note:

- ○—— : parts extracted from the component side.
- Abbreviation

G: Germany model
IT: Italian model


1
2
3
4
5
6
7
8
A
B
C
D
E
F
G
H
I
J
K
【POWER AMP BOARD】
(IT MODEL)
IC1201
Q1201
Q1202
Q1203
Q1251
D1201
D1251
1-638-301-
11
【FUSE BOA
F1304
【POWER BOARD】
CN1302
AC OUTLET
F1301
(UK MODEL)
(AEP/IT/G MODEL)
CN1301
AC IN
06
BRN
BLU
C1301
RY1301
(UK MODEL)(AEP/IT/G MODEL)
(AEP/IT/G MODEL)
D1302
D1301
D1324
Q1304
Q1303
IC1305
D1321
D1323
Q1302
R1311
C1345
C1330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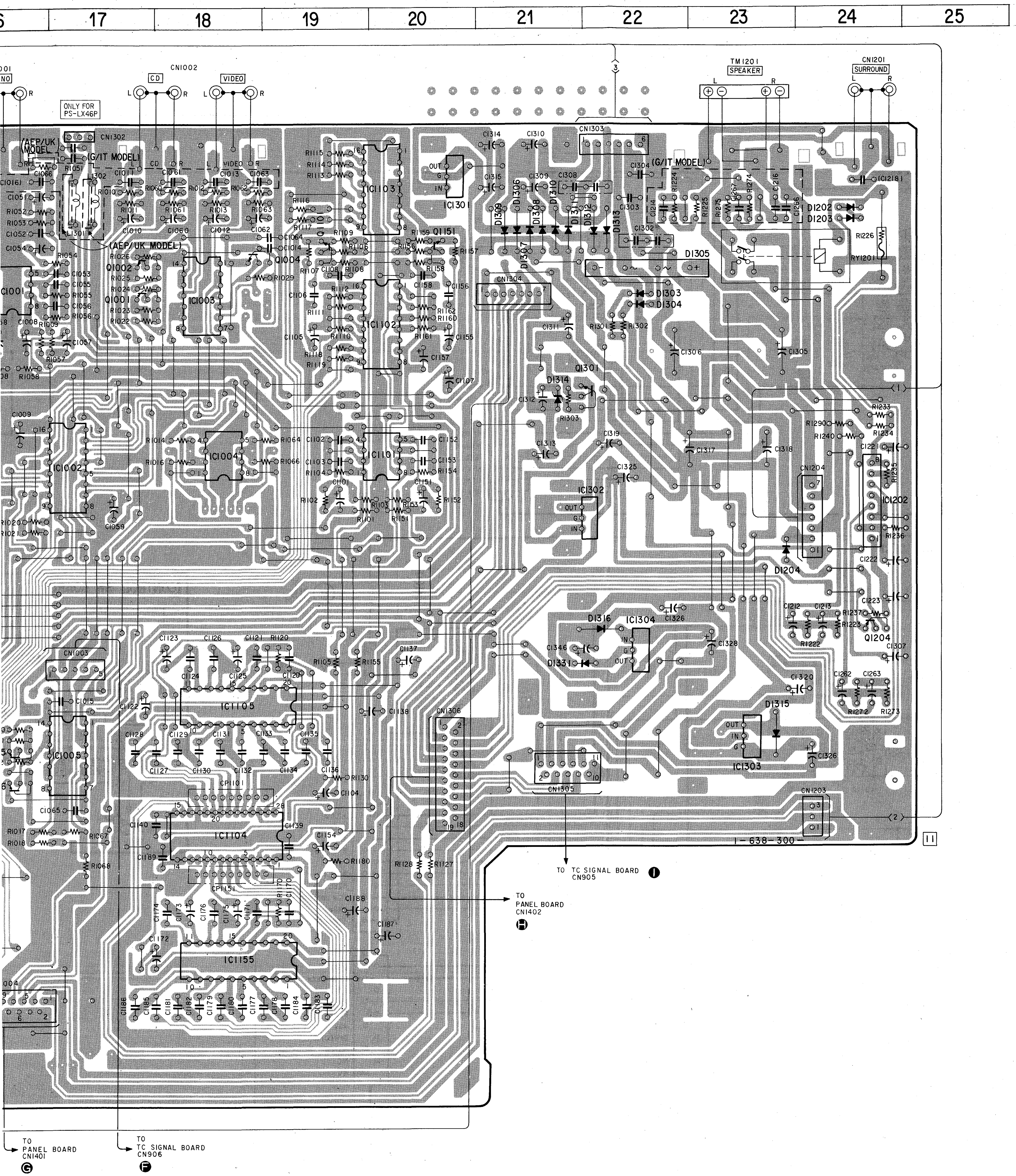
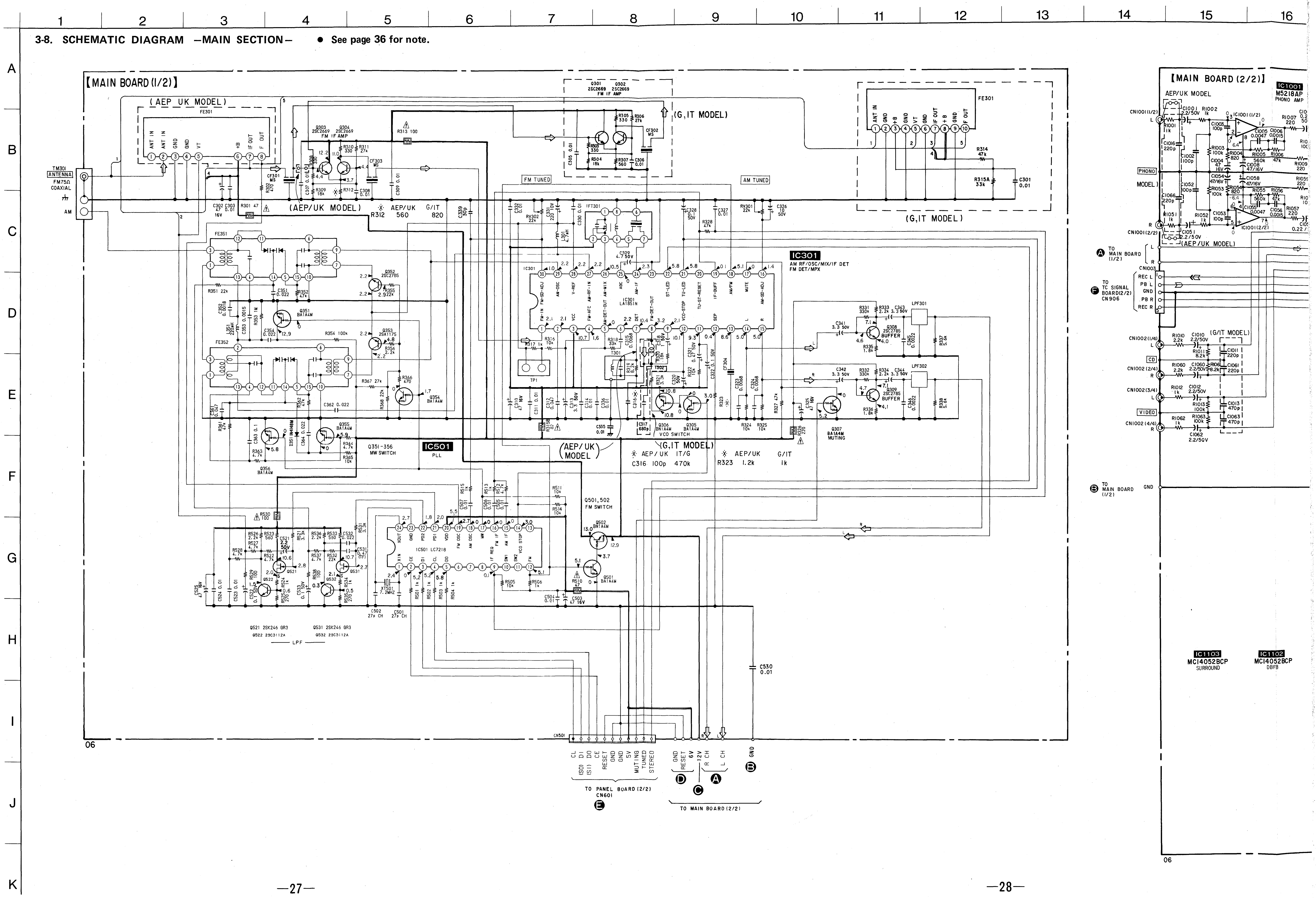
22
【MAIN BOARD】
【FUSE BOARD】
【POWER BOARD】
TM301
ANTENNA
FM 75Ω
COAXIAL
AM
CN1001
PHONO
CN1002
CD
VIDEO
ONLY FOR
PS-LX46P
CN1302
(AEP/UK MODEL)
(G/IT MODEL)
(IT MODEL)
(UK MODEL)
(AEP/IT/G MODEL)
T1301
POWER
TRANSFORMER
CN1302
AC OUTLET
F1301
F1302
F1303
F1304
F1305
T1302
RY1301
IC301
IC501
IC1001
IC1002
IC1003
IC1004
IC1005
IC1101
IC1102
IC1103
IC1104
IC1105
IC1155
IC1301
IC1302
IC1304
IC1305
1-638-301-
1-638-299-
1-638-298-
BRN
BLU
CN1303
CN1304
CN1305
CN1306
CN1003
CN1004
CN501
TO
PANEL BOARD
CN601
Ⓔ
TO
PANEL BOARD
CN1401
Ⓖ
TO
TC SIGNAL BOARD
CN906
Ⓕ
TO
PANEL BOARD
CN1402
Ⓗ
TO TC SIGNAL BOARD
CN905
Ⓘ

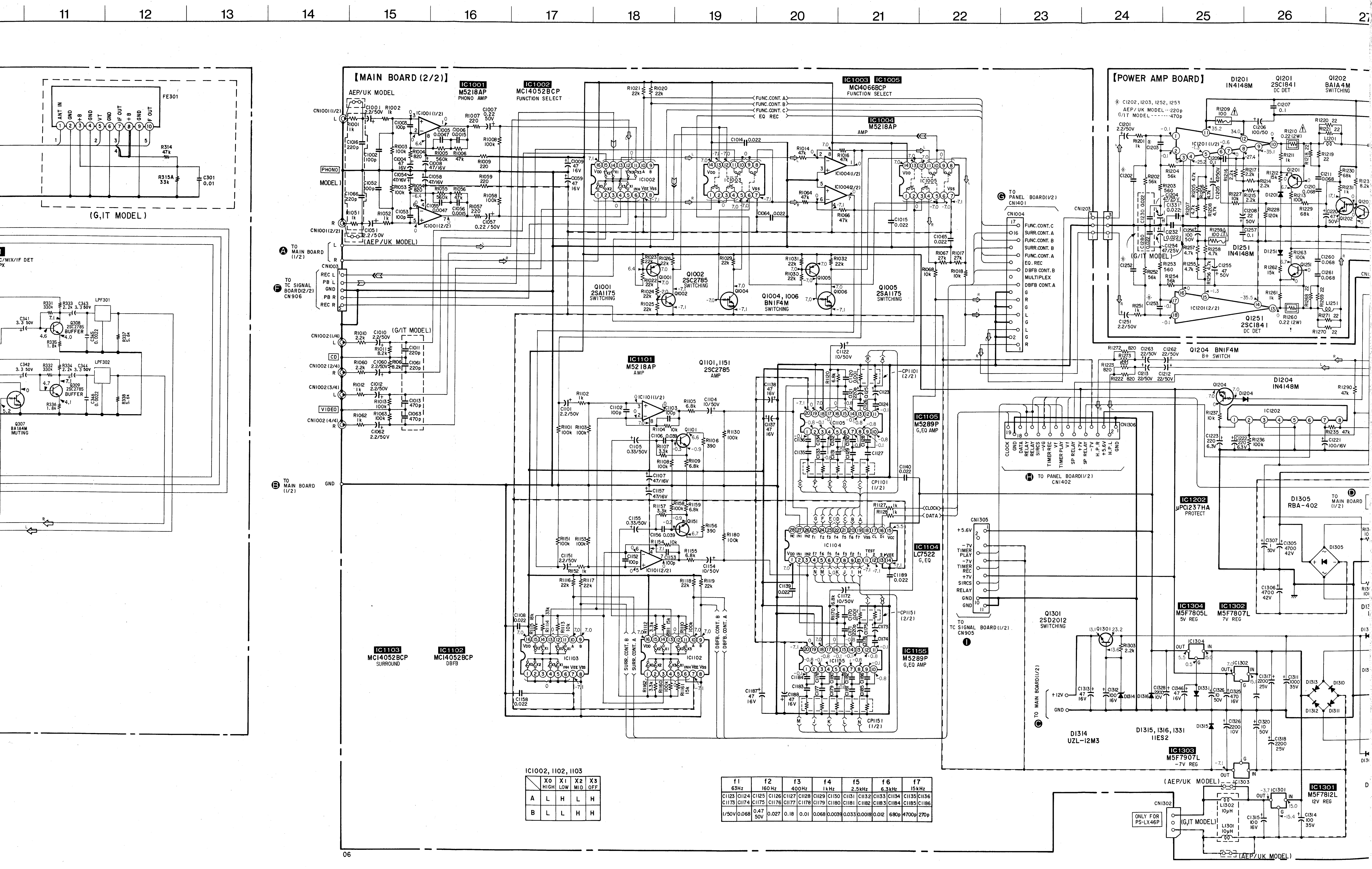
17
18
19
20
21
22
23
24
25
CN1002
CD
VIDEO
ONLY FOR PS-LX46P
CN1302
(AEP/UK MODEL)
(G/IT MODEL)
TM1201
SPEAKER
CN1201
SURROUND
CN1303
IC1301
IC1103
IC1102
IC1101
IC1003
IC1004
IC1002
IC1001
IC1005
IC1105
IC1104
IC1155
IC1302
IC1303
IC1304
IC1202
Q1151
Q1004
Q1002
Q1001
Q1301
Q1204
D1202
D1203
D1204
D1303
D1304
D1305
D1314
D1315
D1316
D1331
RY1201
R1226
CN1304
CN1305
CN1306
CN1203
CN1204
CN1003
CP1101
CP1151
1-638-300-
11
TO TC SIGNAL BOARD CN905
TO PANEL BOARD CN1402
TO PANEL BOARD CN1401
TO TC SIGNAL BOARD CN906

3-8. SCHEMATIC DIAGRAM —MAIN SECTION—

- See page 36 for note.



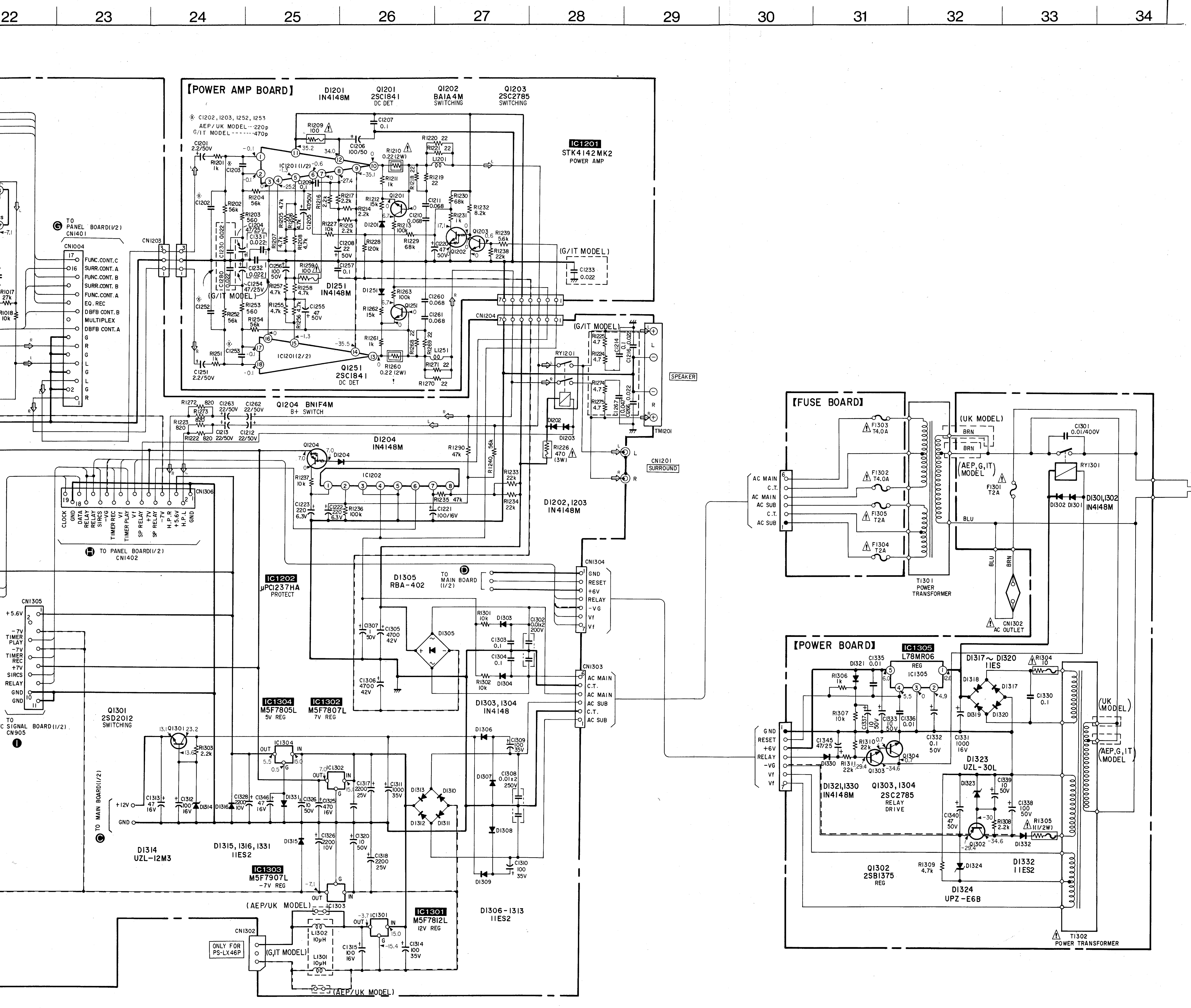
【MAIN BOARD (1/2)】
(AEP UK MODEL)
FE301
ANT IN
GND
VT
+B
IF OUT
F OUT
TM301
ANTENNA
FM75Ω
COAXIAL
AM
Q303 2SC2669
Q304 2SC2669
FM IF AMP
Q301 2SC2669
Q302 2SC2669
FM IF AMP
(G,IT MODEL)
R313 100
CF301 MS
CF302 MS
CF303 MS
FM TUNED
AM TUNED
(AEP/UK MODEL)
※ AEP/UK G/IT
R312 560 820
IFT301
IC301
AM RF/OSC/MIX/IF DET
FM DET/MPX
IC301 LA1851N
FE351
FE352
Q351 BA1A4M
Q352 2SC2785
Q353 2SA1175
Q354 BA1A4M
Q355 BA1A4M
Q356 BA1A4M
Q351-356
MW SWITCH
IC501
PLL
(AEP/UK MODEL)
(G,IT MODEL)
※ AEP/UK IT/G
C316 100p 470k
※ AEP/UK G/IT
R323 1.2k 1k
Q306 BN1A4M
Q305 BA1A4M
VCO SWITCH
T301
TP1
LPF301
LPF302
Q308 2SC2785 BUFFER
Q309 2SC2785 BUFFER
Q307 BA1A4M MUTING
(G,IT MODEL)
R314 47k
R315A 33k
C301 0.01
Q501,502
FM SWITCH
Q502 BN1A4M
Q501 BA1A4M
IC501 LC7218
XT501 7.2MHz
Q521 2SK246 GR3
Q522 2SC3112A
Q531 2SK246 GR3
Q532 2SC3112A
LPF
C530 0.01
CN501
CL
(SI) DI
(SI) DO
CE
RESET
GND
GND
5V
MUTING
TUNED
STEREO
GND
RESET
6V
12V
R CH
L CH
GND
TO PANEL BOARD (2/2)
CN601
Ⓔ
Ⓓ
Ⓒ
Ⓐ
Ⓑ
TO MAIN BOARD (2/2)
06
【MAIN BOARD (2/2)】
AEP/UK MODEL
IC1001
M5218AP
PHONO AMP
CN1001(1/2)
CN1001(2/2)
PHONO
MODEL)
(AEP/UK MODEL)
Ⓐ TO MAIN BOARD (1/2)
CN1003
REC L
PB L
GND
PB R
REC R
Ⓕ TO TC SIGNAL BOARD (2/2) CN906
CN1002(1/4)
CD
CN1002(2/4)
CN1002(3/4)
VIDEO
CN1002(4/4)
(G/IT MODEL)
Ⓑ TO MAIN BOARD (1/2)
IC1103
MC14052BCP
SURROUND
IC1102
MC14052BCP
DBFB
06


11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26
FE301
(G,IT MODEL)
【MAIN BOARD (2/2)】
AEP/UK MODEL
IC1001 M5218AP PHONO AMP
IC1002 MC14052BCP FUNCTION SELECT
IC1003 IC1005 MC14066BCP FUNCTION SELECT
IC1004 M5218AP AMP
PHONO
(AEP/UK MODEL)
(G/IT MODEL)
CD
VIDEO
Ⓐ TO MAIN BOARD (1/2)
Ⓕ TO TC SIGNAL BOARD(2/2) CN906
Ⓑ TO MAIN BOARD (1/2)
Ⓖ TO PANEL BOARD(1/2) CN1401
Q1001 2SA1175 SWITCHING
Q1002 2SC2785 SWITCHING
Q1004, 1006 BN1F4M SWITCHING
Q1005 2SA1175 SWITCHING
IC1101 M5218AP AMP
Q1101, 1151 2SC2785 AMP
IC1105 M5289P G,EQ AMP
IC1104 LC7522 G,EQ
IC1155 M5289P G,EQ AMP
IC1103 MC14052BCP SURROUND
IC1102 MC14052BCP DBFB
Q307 BA1A4M MUTING
Q308 2SC2785 BUFFER
Q309 2SC2785 BUFFER
LPF301
LPF302
C/MIX/IF DET
FUNC.CONT.A
FUNC.CONT.B
FUNC.CONT.C
EQ REC
SURR.CONT.A
SURR.CONT.B
DBFB.CONT.A
DBFB.CONT.B
MULTIPLEX
CLOCK
DATA
Ⓗ TO PANEL BOARD(1/2) CN1402
Ⓘ TO TC SIGNAL BOARD(1/2) CN905
【POWER AMP BOARD】
D1201 1N4148M
Q1201 2SC1841 DC DET
Q1202 BA1A4M SWITCHING
※ C1202, 1203, 1252, 1253 AEP/UK MODEL···220p G/IT MODEL·······470p
IC1201 (1/2)
IC1201 (2/2)
D1251 1N4148M
Q1251 2SC1841 DC DET
Q1204 BN1F4M B+ SWITCH
D1204 1N4148M
IC1202
IC1202 μPC1237HA PROTECT
Ⓓ TO MAIN BOARD (1/2)
D1305 RBA-402
IC1304 M5F7805L 5V REG
IC1302 M5F7807L 7V REG
Q1301 2SD2012 SWITCHING
Ⓒ TO MAIN BOARD(1/2)
D1314 UZL-12M3
D1315, 1316, 1331 11ES2
IC1303 M5F7907L -7V REG
IC1301 M5F7812L 12V REG
(AEP/UK MODEL)
ONLY FOR PS-LX46P
(G,IT MODEL)
06

IC1002, 1102, 1103

	X0 HIGH	X1 LOW	X2 MID	X3 OFF
A	L	H	L	H
B	L	L	H	H

f1 63Hz		f2 160Hz		f3 400Hz		f4 1kHz		f5 2.5kHz		f6 6.3kHz		f7 15kHz	
C1123 C1173	C1124 C1174	C1125 C1175	C1126 C1176	C1127 C1177	C1128 C1178	C1129 C1179	C1130 C1180	C1131 C1181	C1132 C1182	C1133 C1183	C1134 C1184	C1135 C1185	C1136 C1186
1/50V	0.068	0.47 50V	0.027	0.18	0.01	0.068	0.0039	0.033	0.0018	0.012	680p	4700p	270p


22
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33
34
【POWER AMP BOARD】
D1201 IN4148M
Q1201 2SC1841 DC DET
Q1202 BA1A4M SWITCHING
Q1203 2SC2785 SWITCHING
※ C1202, 1203, 1252, 1253
AEP/UK MODEL···220p
G/IT MODEL·······470p
IC1201 STK4142MK2 POWER AMP
IC1201(1/2)
IC1201(2/2)
D1251 IN4148M
Q1251 2SC1841 DC DET
R1210 0.22(2W)
R1260 0.22(2W)
(G/IT MODEL)
C1233 0.022
CN1203
CN1204
RY1201
TM1201
SPEAKER
CN1201 SURROUND
G TO PANEL BOARD(1/2) CN1401
CN1004
FUNC.CONT.C
SURR.CONT.A
FUNC.CONT.B
SURR.CONT.B
FUNC.CONT.A
EQ.REC
DBFB CONT.B
MULTIPLEX
DBFB CONT.A
Q1204 BN1F4M B+ SWITCH
D1204 IN4148M
IC1202
IC1202 μPC1237HA PROTECT
D1202, 1203 IN4148M
R1226 470 (3W)
CN1306
CLOCK
GND
DATA
RELAY
RELAY
SIRCS
-VG
TIMER REC
Vf
TIMER PLAY
Vf
SP RELAY
SP RELAY
+7V
-7V
H.P.R
+5.6V
H.P.L
GND
H TO PANEL BOARD(1/2) CN1402
CN1305
+5.6V
-7V TIMER PLAY
-7V TIMER REC
+7V
SIRCS
RELAY
GND
GND
TO C SIGNAL BOARD(1/2) CN905
I
Q1301 2SD2012 SWITCHING
TO MAIN BOARD(1/2)
C
+12V
GND
D1314 UZL-12M3
D1315, 1316, 1331 11ES2
IC1304 M5F7805L 5V REG
IC1302 M5F7807L 7V REG
IC1303 M5F7907L -7V REG
IC1301 M5F7812L 12V REG
D1305 RBA-402
TO MAIN BOARD (1/2)
D
CN1304
GND
RESET
+6V
RELAY
-VG
Vf
Vf
CN1303
AC MAIN
C.T.
AC MAIN
AC SUB
C.T.
AC SUB
D1303, 1304 IN4148
D1306-1313 11ES2
(AEP/UK MODEL)
(G,IT MODEL)
CN1302
ONLY FOR PS-LX46P
L1302 10μH
L1301 10μH
【FUSE BOARD】
F1303 T4.0A
F1302 T4.0A
F1305 T2A
F1304 T2A
T1301 POWER TRANSFORMER
(UK MODEL)
BRN
BLU
(AEP,G,IT MODEL)
F1301 T2A
C1301 0.01/400V
RY1301
D1301,1302 IN4148M
CN1301
AC IN
CN1302 AC OUTLET
【POWER BOARD】
IC1305 L78MR06
REG
D1317～D1320 11ES
D1321,1330 IN4148M
Q1303, 1304 2SC2785 RELAY DRIVE
D1323 UZL-30L
Q1302 2SB1375 REG
D1332 11ES2
D1324 UPZ-E6B
R1305 1(1/2W)
(UK MODEL)
(AEP,G,IT MODEL)
T1302 POWER TRANSFORMER

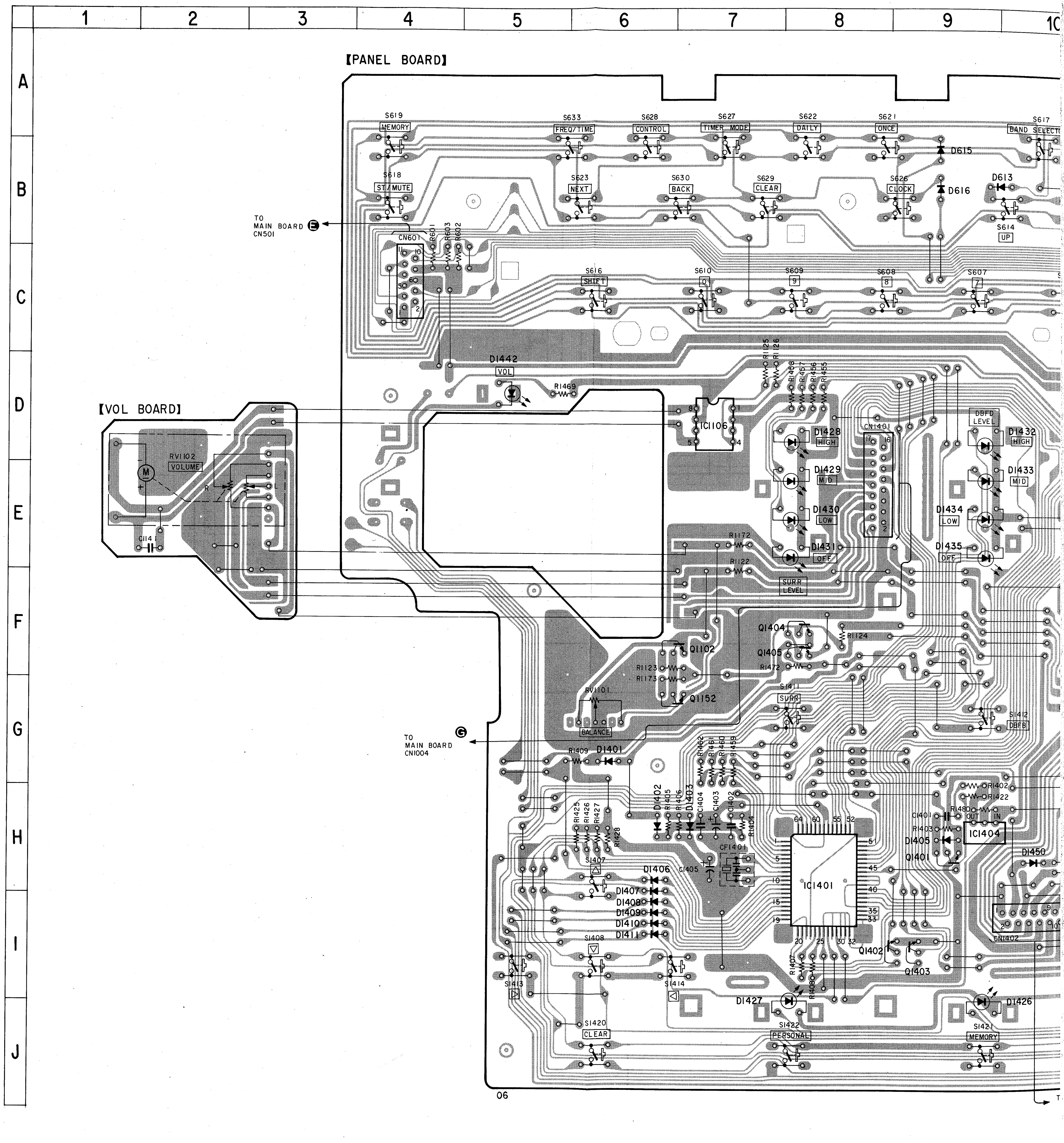
3-9. PRINTED WIRING BOARDS
—PANEL SECTION—

- **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location
D601	B-11	D1429	E-8
D602	B-15	D1430	E-8
D603	C-15	D1431	E-8
D604	C-16	D1432	D-10
D611	C-13	D1433	E-10
D612	C-11	D1434	E-9
D613	B-10	D1435	E-9
D614	B-10	D1436	H-16
D615	B-9	D1437	E-15
D616	B-9	D1438	E-14
D617	C-12	D1439	E-13
D621	B-15	D1440	E-12
D625	B-14	D1441	E-12
D626	C-14	D1442	D-5
D627	B-14	D1443	I-16
D631	B-14		
D1401	G-6	IC601	B-13
D1402	H-6	IC602	B-16
D1403	H-7	IC1106	D-7
D1404	D-10	IC1401	H-8
D1405	H-9	IC1402	I-13
D1406	H-6	IC1403	I-12
D1407	H-6	IC1404	H-9
D1408	I-6		
D1409	I-6	Q601	B-11
D1410	I-6	Q602	C-16
D1411	I-6	Q603	D-13
D1412	I-11	Q1102	F-7
D1413	I-11	Q1152	G-7
D1414	H-12	Q1401	H-9
D1415	H-12	Q1402	I-8
D1416	H-13	Q1403	I-9
D1417	H-13	Q1404	F-7
D1418	G-13	Q1405	F-7
D1419	G-13	Q1406	I-15
D1420	H-12	Q1407	F-11
D1421	I-14	Q1408	F-11
D1422	I-14	Q1409	F-12
D1423	I-13	Q1410	F-12
D1424	I-13	Q1411	F-13
D1425	I-11	Q1412	F-13
D1426	I-10	Q1413	F-14
D1427	I-7	Q1414	F-12
D1428	D-8		

Note:

- ○—— : parts extracted from the component side.
- Abbreviation
  G: Germany model
  IT: Italian model


1
2
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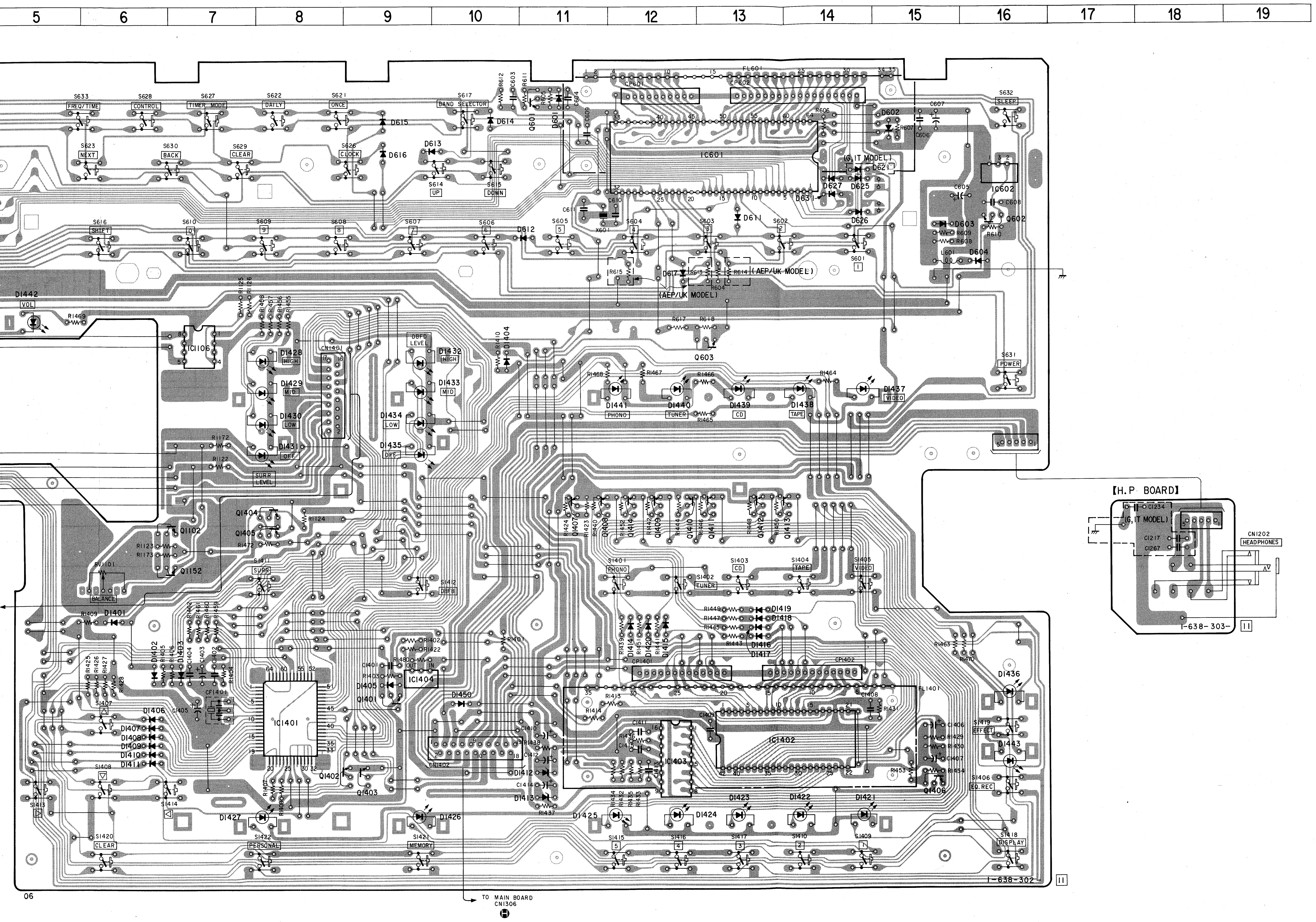
8
9
A
B
C
D
E
F
G
H
I
J
【PANEL BOARD】
【VOL BOARD】
TO MAIN BOARD Ⓔ CN501
TO MAIN BOARD Ⓖ CN1004
S619 MEMORY
S633 FREQ/TIME
S628 CONTROL
S627 TIMER MODE
S622 DAILY
S621 ONCE
S617 BAND SELECT
D615
S618 ST/MUTE
S623 NEXT
S630 BACK
S629 CLEAR
S626 CLOCK
D616
D613
S614 UP
CN601
R601
R603
R602
S616 SHIFT
S610 0
S609 9
S608 8
S607 7
D1442 VOL
R1469
R1125
R1126
R1468
R1457
R1456
R1455
IC1106
CN1401
D1428 HIGH
D1429 MID
D1430 LOW
D1431 OFF
DBFD LEVEL
D1432 HIGH
D1433 MID
D1434 LOW
D1435 OFF
RV1102 VOLUME
C1141
R1172
R1122
SURR LEVEL
Q1404
Q1405
R1124
R1472
Q1102
R1123
R1173
Q1152
RV1101 BALANCE
S1411 SURR
S1412 DBFB
R1409
D1401
R1462
R1461
R1460
R1459
D1402
R1405
R1406
D1403
C1404
C1403
C1402
R1404
R1425
R1426
R1427
R1428
CF1401
S1407
D1406
C1405
D1407
D1408
D1409
D1410
D1411
S1408
IC1401
R1402
R1422
C1401
R1480
R1403
OUT
IN
IC1404
D1405
Q1401
D1450
CN1402
Q1402
Q1403
R1407
R1408
S1413
S1414
D1427
D1426
S1420 CLEAR
S1422 PERSONAL
S1421 MEMORY
06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14
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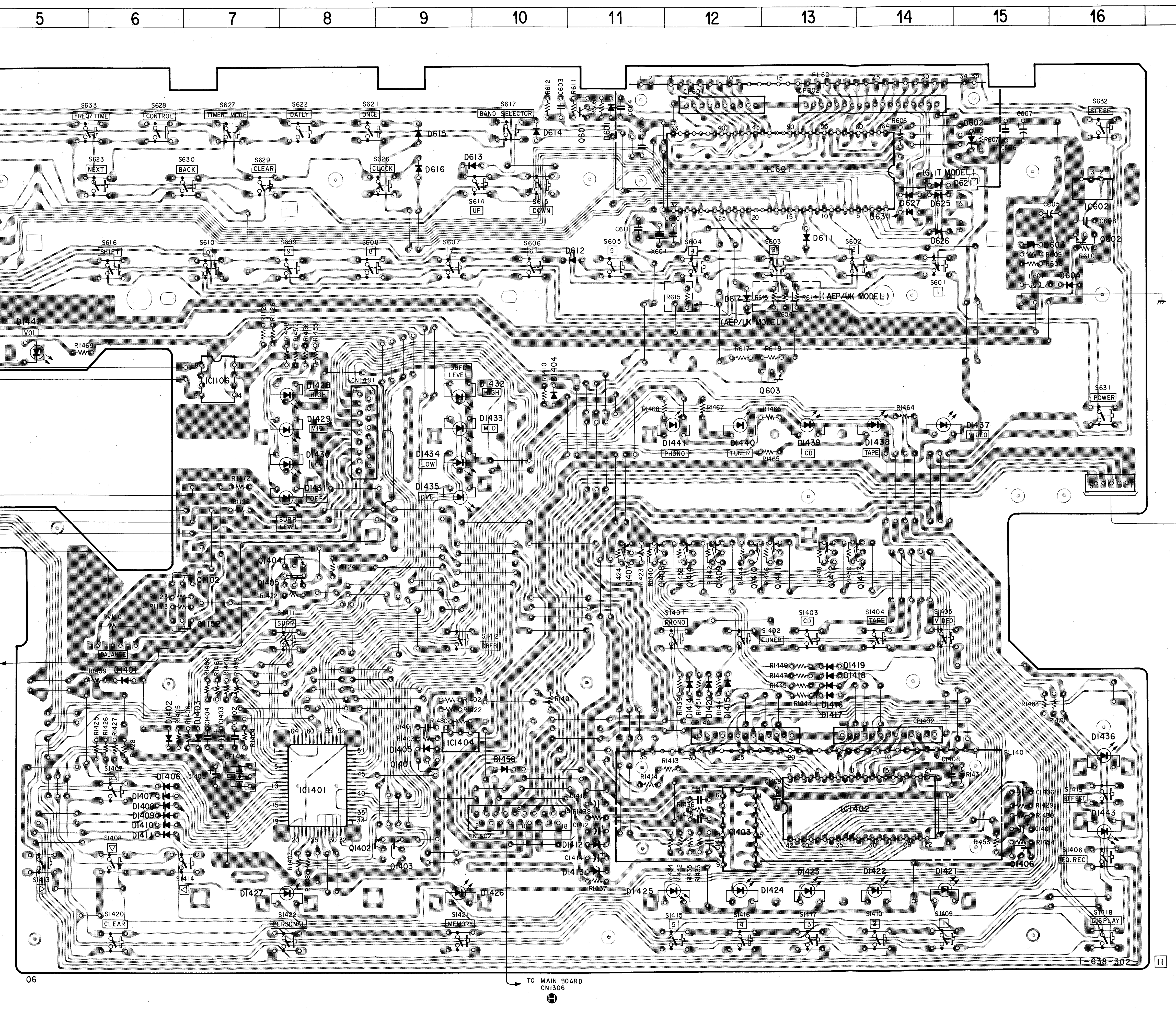
16
17
18
19
S633 FREQ/TIME
S628 CONTROL
S627 TIMER MODE
S622 DAILY
S621 ONCE
S617 BAND SELECTOR
S623 NEXT
S630 BACK
S629 CLEAR
S626 CLOCK
S614 UP
S615 DOWN
S616 SHIFT
S610 0
S609 9
S608 8
S607 7
S606 6
S605 5
S604 4
S603 3
S602 2
S601 1
S632 SLEEP
S631 POWER
D615
D616
D613
D614
D612
D611
D617
D602
D603
D604
D621
D625
D626
D627
D631
(G,IT MODEL)
Q601
Q602
Q603
D601
FL601
CP601
CP602
IC601
IC602
X601
L601
R615
R613
R614
R604
(AEP/UK MODEL)
R617
R618
D1442 VOL
IC1106
Q1102
Q1152
Q1404
Q1405
RV1101 BALANCE
D1428 HIGH
D1429 MID
D1430 LOW
D1431 OFF
SURR LEVEL
CN1401
DBFD LEVEL
D1432 HIGH
D1433 MID
D1434 LOW
D1435 OFF
D1441 PHONO
D1440 TUNER
D1439 CD
D1438 TAPE
D1437 VIDEO
S1401 PHONO
S1402 TUNER
S1403 CD
S1404 TAPE
S1405 VIDEO
S1411 SURR
S1412 DBFD
D1401
D1402
D1403
D1405
CF1401
IC1401
IC1404
Q1401
Q1402
Q1403
Q1406
Q1407
Q1408
Q1409
Q1410
Q1411
Q1412
Q1413
D1450
CN1402
IC1402
IC1403
FL1401
CP1401
CP1402
D1406
D1407
D1408
D1409
D1410
D1411
D1412
D1413
D1414
D1415
D1416
D1417
D1418
D1419
D1420
D1421
D1422
D1423
D1424
D1425
D1426
D1427
D1436
D1443
S1407
S1408
S1413
S1414
S1420 CLEAR
S1422 PERSONAL
S1421 MEMORY
S1415 5
S1416 4
S1417 3
S1410 2
S1409 1
S1419 EFFECT
S1406 EQ. REC
S1418 DISPLAY
1-638-302- 11
06
TO MAIN BOARD CN1306
H
【H.P BOARD】
C1234
(G,IT MODEL)
C1217
C1267
CN1202 HEADPHONES
1-638-303- 11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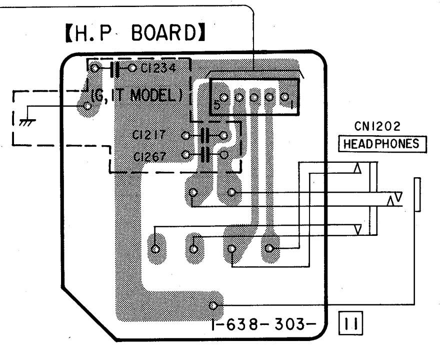
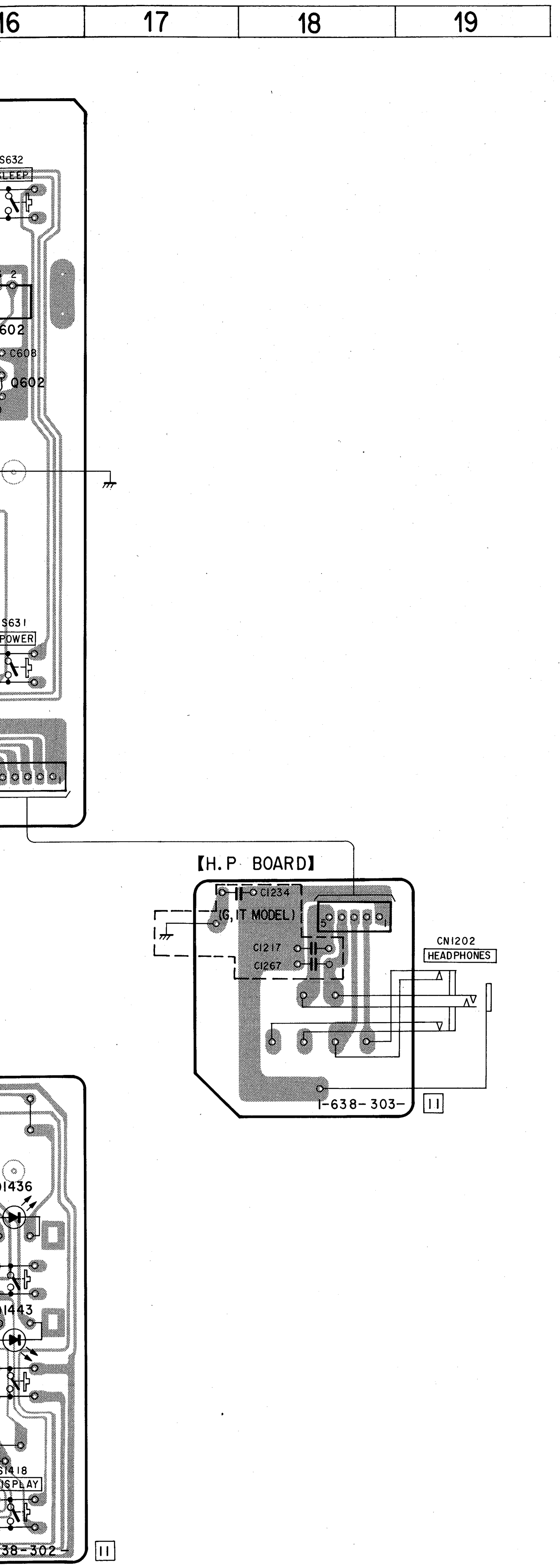
11
12
13
14
15
16
17
18
19
S633 FREQ/TIME
S628 CONTROL
S627 TIMER MODE
S622 DAILY
S621 ONCE
S617 BAND SELECTOR
S632 SLEEP
S623 NEXT
S630 BACK
S629 CLEAR
S626 CLOCK
S614 UP
S615 DOWN
S616 SHIFT
S610 0
S609 9
S608 8
S607 7
S606 6
S605 5
S604 4
S603 3
S602 2
S601 1
FL601
CP601
CP602
IC601
IC602
(G, IT MODEL)
(AEP/UK MODEL)
D602
D603
D604
D611
D612
D613
D614
D615
D616
D617
D621
D625
D626
D627
D631
Q601
Q602
Q603
X601
L601
D1442 VOL
IC1106
CN1401
D1428 HIGH
D1429 MID
D1430 LOW
D1431 OFF
DBFD LEVEL
D1432 HIGH
D1433 MID
D1434 LOW
D1435 OFF
SURR LEVEL
S631 POWER
D1441 PHONO
D1440 TUNER
D1439 CD
D1438 TAPE
D1437 VIDEO
Q1102
Q1152
Q1404
Q1405
RV1101 BALANCE
S1411 SURR
S1412 DBFB
S1401 PHONO
S1402 TUNER
S1403 CD
S1404 TAPE
S1405 VIDEO
D1401
D1402
D1403
D1406
D1407
D1408
D1409
D1410
D1411
D1413
D1414
D1415
D1416
D1417
D1418
D1419
D1420
D1450
IC1401
IC1402
IC1403
IC1404
CF1401
CN1402
CP1401
CP1402
FL1401
Q1401
Q1402
Q1403
Q1406
S1407
S1408
S1413
S1414
S1420 CLEAR
S1422 PERSONAL
S1421 MEMORY
D1427
D1426
D1425
D1424
D1423
D1422
D1421
D1436
D1443
S1419 EFFECT
S1406 EQ.REC
S1418 DISPLAY
S1415 5
S1416 4
S1417 3
S1410 2
S1409 1
1-638-302-
11
06
TO MAIN BOARD CN1306
H


【H.P BOARD】
C1234
(G, IT MODEL)
C1217
C1267
CN1202 HEADPHONES
1-638-303-
11



Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- △ : internal component.
- ▭ : nonflammable resistor.
- ▭ : fusible resistor.
- ━━ : B+ Line
- ━ ━ ━ : B– Line
- ☐ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
  ( ) : PB
  < > : REC
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM
  ⇨ : REC (DECK B)
  ⇨ : PB (DECK A)
  ⇨ : PB (DECK B)

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

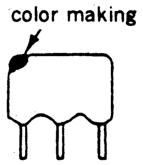
- Abbreviation

G: Germany model
IT: Italian model

Note on Ceramic Filter Replacement.

This set employs two or three ceramic filters (CF301 – CF303) which should have the same color marking to identify their center frequency. Therefore FM IF offset adjustment by jumpers (*A, *B) is necessary to match the center frequency of the ceramic filters used with FM intermediate frequency.

AEP, UK model: CF301, 303
G, IT model: CF301 – CF303



○ : Connected
× : not Connected

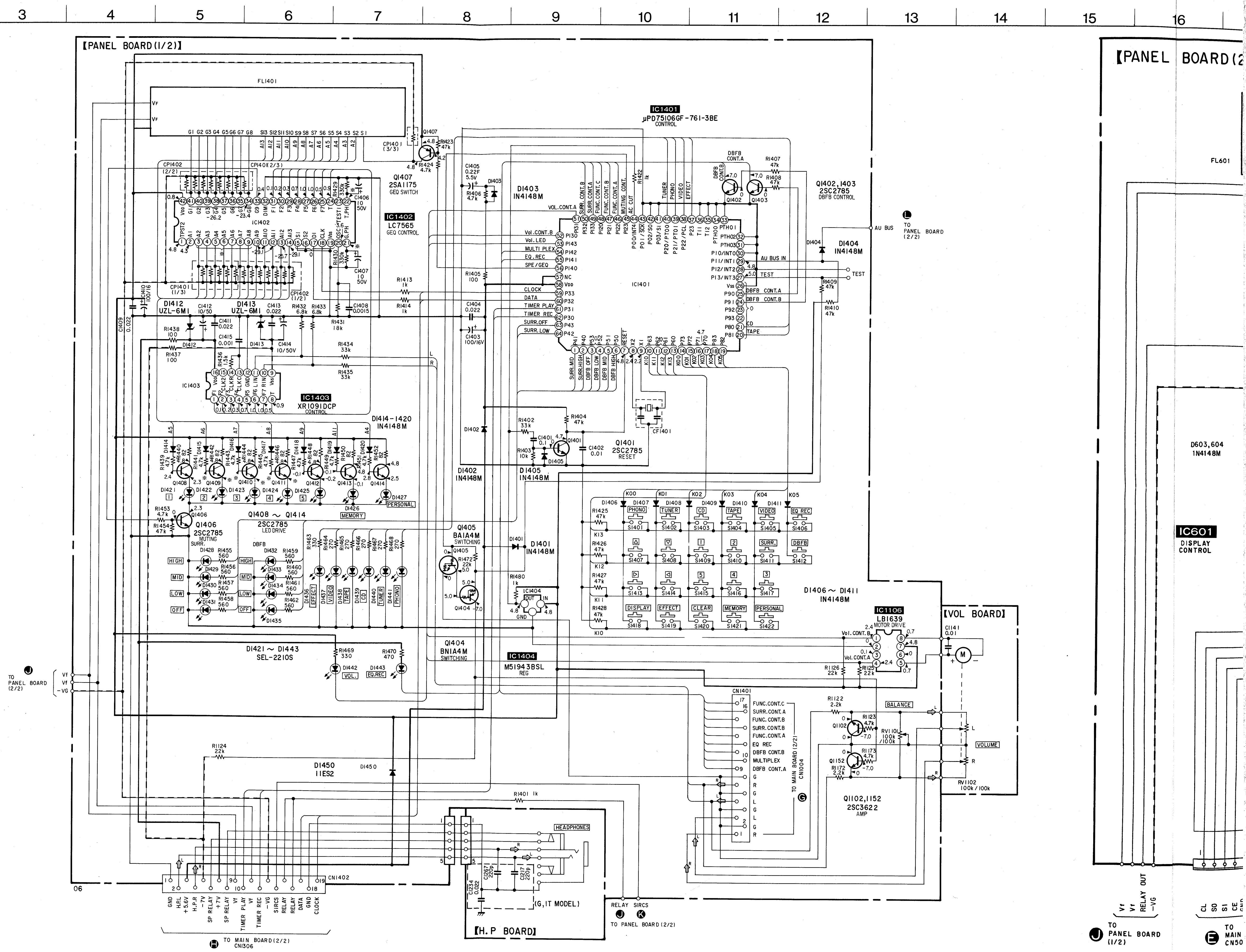
Ceramic filter		Mount		FM intermediate fequency (MHz)
Color mark	Center frequency (MHz)	IF-50K * B	IF+50K * A	
white	10.750	×	○	10.750
Red	10.700	×	×	10.700
Black	10.650	○	×	10.650

FM intermediate frequency is determined by the three types as shown above. Ceramic filters of same center frequency, i. e. of same color coding, should be used for CF301 – 303.

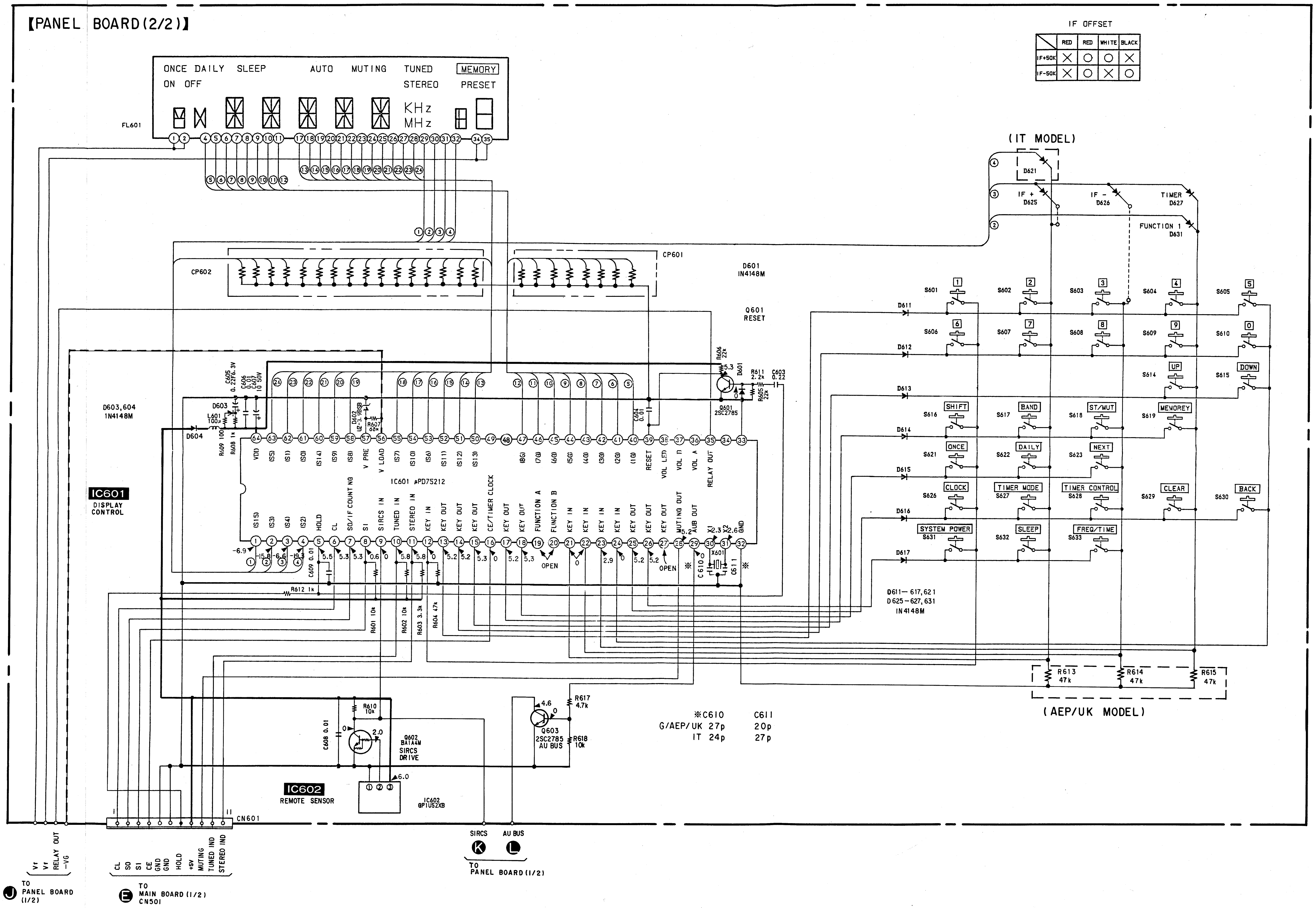
When replacing the ceramic filters, perform the FM Di-scriminator Adjustment.

3-10. SCHEMATIC DIAGRAM
–PANEL SECTION–

- See page 36 for note.


【PANEL BOARD (1/2)】
FL1401
IC1401 μPD75106GF-761-3BE CONTROL
IC1402 LC7565 GEQ CONTROL
IC1403 XR1091DCP CONTROL
IC1404 M51943BSL REG
IC1106 LB1639 MOTOR DRIVE
Q1407 2SA1175 GEQ SWITCH
Q1402, 1403 2SC2785 DBFB CONTROL
Q1401 2SC2785 RESET
Q1405 BA1A4M SWITCHING
Q1404 BN1A4M SWITCHING
Q1406 2SC2785 MUTING
Q1408 ~ Q1414 2SC2785 LED DRIVE
Q1102, 1152 2SC3622 AMP
D1403 1N4148M
D1404 1N4148M
D1402 1N4148M
D1405 1N4148M
D1401 1N4148M
D1414-1420 1N4148M
D1406 ~ D1411 1N4148M
D1412 UZL-6M1
D1413 UZL-6M1
D1421 ~ D1443 SEL-2210S
D1450 11ES2
CF1401
S1401 PHONO
S1402 TUNER
S1403 CD
S1404 TAPE
S1405 VIDEO
S1406 EQ REC
S1411 SURR.
S1412 DBFB
S1418 DISPLAY
S1419 EFFECT
S1420 CLEAR
S1421 MEMORY
S1422 PERSONAL
HIGH
MID
LOW
OFF
EFFECT
VIDEO
TAPE
CD
TUNER
PHONO
VOL.
EQ.REC
MEMORY
PERSONAL
AU BUS
TO PANEL BOARD (2/2)
AU BUS IN
TEST
【VOL BOARD】
BALANCE
VOLUME
RV1101 100k/100k
RV1102 100k/100k
CN1401
TO MAIN BOARD (2/2) CN1004
CN1402
GND
H.P.L
+5.6V
H.P.R
-7V
SP RELAY
+7V
SP RELAY
Vf
TIMER PLAY
Vf
TIMER REC
-VG
SIRCS
RELAY
DATA
GND
CLOCK
TO MAIN BOARD (2/2) CN1306
【H.P BOARD】
HEADPHONES
(G, IT MODEL)
RELAY
SIRCS
TO PANEL BOARD (2/2)
TO PANEL BOARD (2/2)
Vf
Vf
-VG
【PANEL BOARD (2
FL601
D603, 604 1N4148M
IC601 DISPLAY CONTROL
RELAY OUT
TO PANEL BOARD (1/2)
TO MAIN CN50

【PANEL BOARD(2/2)】

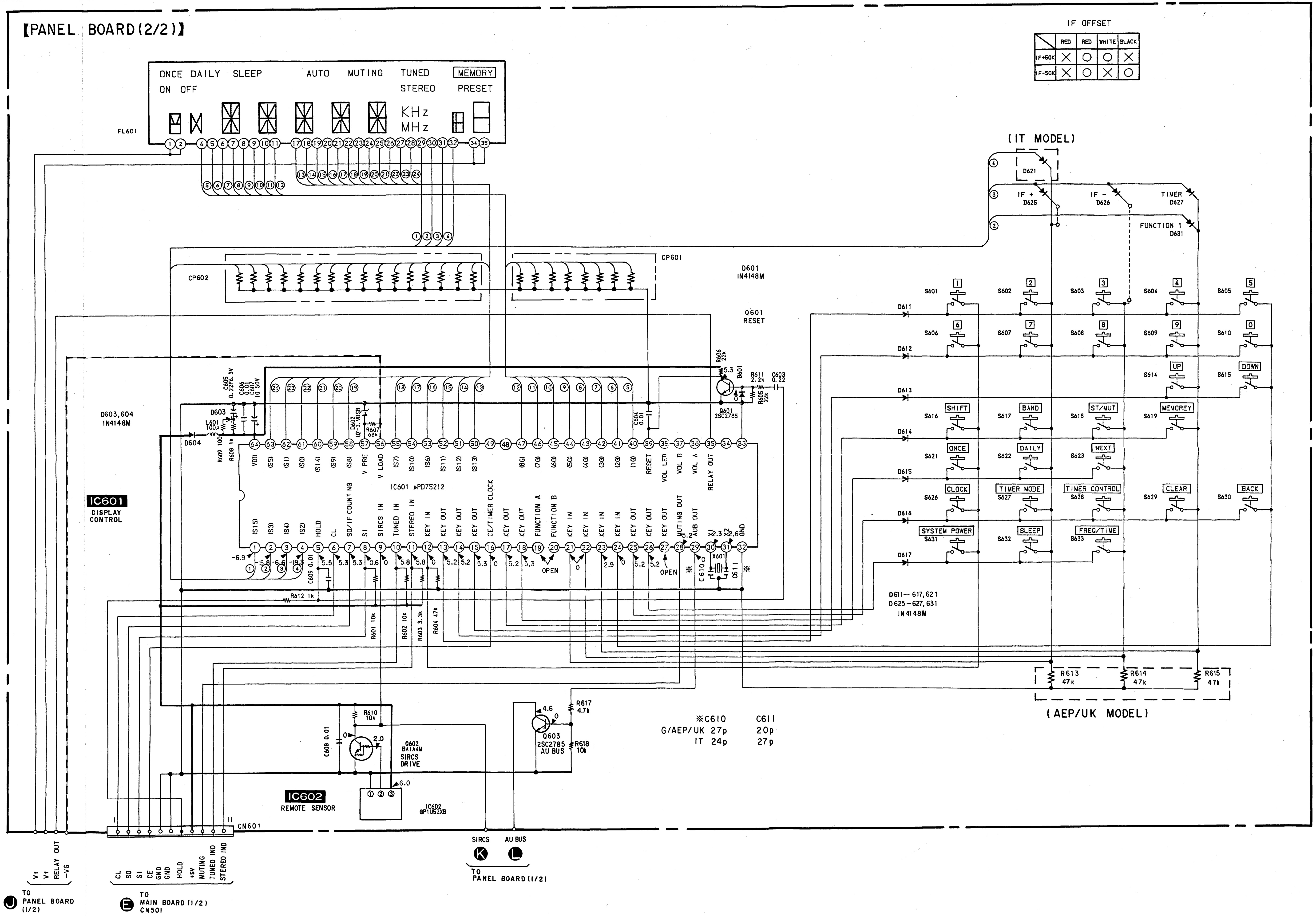

FL601
ONCE DAILY SLEEP AUTO MUTING TUNED MEMORY
ON OFF STEREO PRESET
KHz
MHz
CP602
CP601
D601
1N4148M
Q601
RESET
R606 22k
D603,604
1N4148M
D603
L601 100μ
D604
R609 100
R608 1k
C605 0.22 6.3V
C606 0.01
C607 10 50V
D602 UZ-3.9BSB
R607 68k
C604 0.01
Q601 2SC2785
R611 2.2k
R605 22k
C603 0.22
IC601
DISPLAY CONTROL
IC601 μPD75212
VDD
(S5)
(S1)
(S0)
(S14)
(S9)
(S8)
V PRE
V LOAD
(S7)
(S10)
(S6)
(S11)
(S12)
(S13)
(8G)
(7G)
(6G)
(5G)
(4G)
(3G)
(2G)
(1G)
RESET
VOL LED
VOL B
VOL A
RELAY OUT
(S15)
(S3)
(S4)
(S2)
HOLD
CL
SO/IF COUNT NG
SI
SIRCS IN
TUNED IN
STEREO IN
KEY IN
KEY OUT
KEY OUT
KEY OUT
CE/TIMER CLOCK
KEY OUT
KEY OUT
FUNCTION A
FUNCTION B
KEY IN
KEY IN
KEY IN
KEY IN
KEY OUT
KEY OUT
KEY OUT
MUTING OUT
AUB OUT
X1
X2
GND
OPEN
OPEN
X601
C609 0.01
R612 1k
R601 10k
R602 10k
R603 3.3k
R604 47k
C610
C611
※
(IT MODEL)
D621
IF + D625
IF - D626
TIMER D627
FUNCTION 1 D631
S601 1
S602 2
S603 3
S604 4
S605 5
S606 6
S607 7
S608 8
S609 9
S610 0
S614 UP
S615 DOWN
S616 SHIFT
S617 BAND
S618 ST/MUT
S619 MEMOREY
S621 ONCE
S622 DAILY
S623 NEXT
S626 CLOCK
S627 TIMER MODE
S628 TIMER CONTROL
S629 CLEAR
S630 BACK
S631 SYSTEM POWER
S632 SLEEP
S633 FREQ/TIME
D611
D612
D613
D614
D615
D616
D617
D611–617,621
D625–627,631
1N4148M
R613 47k
R614 47k
R615 47k
(AEP/UK MODEL)
R610 10k
C608 0.01
Q602 BA1A4M
SIRCS DRIVE
R617 4.7k
Q603 2SC2785
AU BUS
R618 10k
IC602
REMOTE SENSOR
IC602 GP1U52XB
CN601
SIRCS
AU BUS
K
L
TO PANEL BOARD (1/2)
V+
V+
RELAY OUT
-VG
J
TO PANEL BOARD (1/2)
CL
SO
SI
CE
GND
GND
HOLD
+5V
MUTING
TUNED IND
STEREO IND
E
TO MAIN BOARD (1/2) CN501

IF OFFSET

	RED	RED	WHITE	BLACK
IF+50K	×	○	○	×
IF-50K	×	○	×	○

	※C610	C611
G/AEP/UK	27p	20p
IT	24p	27p

【PANEL BOARD(2/2)】


FL601
ONCE DAILY SLEEP
ON OFF
AUTO
MUTING
TUNED
STEREO
MEMORY
PRESET
KHz
MHz
CP602
CP601
D601
1N4148M
Q601
RESET
R606 22k
R611 2.2k
C603 0.22
R605 22k
Q601
2SC2785
C604 0.01
D603,604
1N4148M
D603
D604
L601 100μ
R609 100
R608 1k
C605 0.22F5.5V
C606 0.01
C607 10 50V
D602 RD5.1ESB
R607 68k
IC601
DISPLAY
CONTROL
IC601 μPD75212
VDD
V PRE
V LOAD
RESET
VOL LED
VOL D
VOL A
RELAY OUT
SO/IF COUNTING
SI
SIRCS IN
TUNED IN
STEREO IN
KEY IN
KEY OUT
CE/TIMER CLOCK
FUNCTION A
FUNCTION B
MUTING OUT
AUB OUT
X1
X2
GND
HOLD
CL
OPEN
X601
C609 0.01
C610
C611
R612 1k
R601 10k
R602 10k
R603 3.3k
R604 47k
C608 0.01
R610 10k
Q602
BA1A4M
SIRCS
DRIVE
R617 4.7k
Q603
2SC2785
AU BUS
R618 10k
IC602
REMOTE SENSOR
IC602
GP1U52XB
CN601
(IT MODEL)
D621
IF +
D625
IF -
D626
TIMER
D627
FUNCTION 1
D631
D611
D612
D613
D614
D615
D616
D617
S601 1
S602 2
S603 3
S604 4
S605 5
S606 6
S607 7
S608 8
S609 9
S610 0
S614 UP
S615 DOWN
S616 SHIFT
S617 BAND
S618 ST/MUT
S619 MEMOREY
S621 ONCE
S622 DAILY
S623 NEXT
S626 CLOCK
S627 TIMER MODE
S628 TIMER CONTROL
S629 CLEAR
S630 BACK
S631 SYSTEM POWER
S632 SLEEP
S633 FREQ/TIME
D611-617,621
D625-627,631
1N4148M
R613 47k
R614 47k
R615 47k
(AEP/UK MODEL)
V1
V1
RELAY OUT
-VG
J
TO
PANEL BOARD
(1/2)
CL
SO
SI
CE
GND
GND
HOLD
+5V
MUTING
TUNED IND
STEREO IND
E
TO
MAIN BOARD (1/2)
CN501
SIRCS
AU BUS
K
L
TO
PANEL BOARD (1/2)

IF OFFSET

	RED	RED	WHITE	BLACK
IF+50K	✕	○	○	✕
IF-50K	✕	○	✕	○

	※C610	C611
G/AEP/UK	27p	20p
IT	24p	27p

SECTION 4 EXPLODED VIEWS

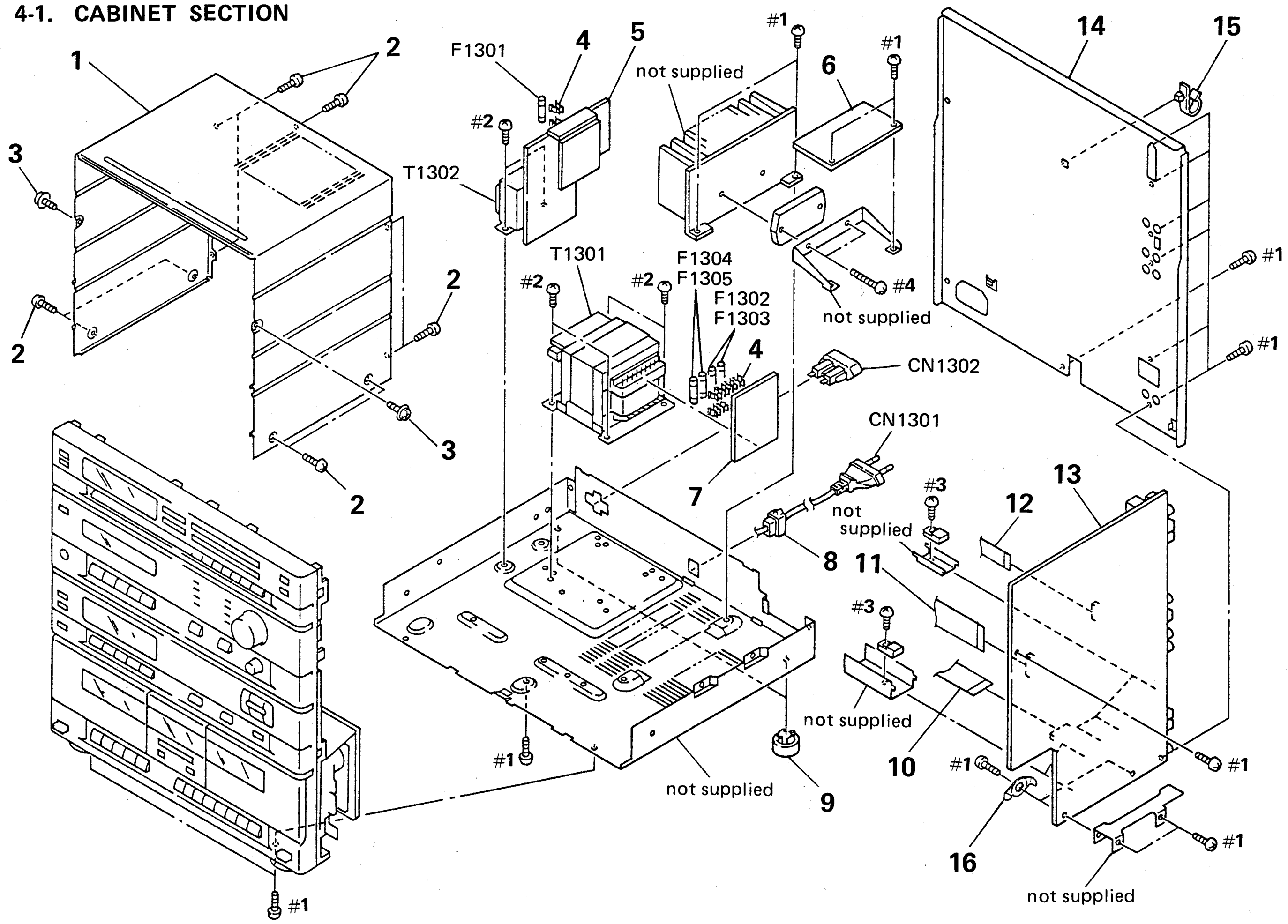
NOTE:

- –XX, –X mean standardized parts, so they may have some differences from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ Parts color ↑ Cabinet's color
- Items marked "＊" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- Abbreviation
  G: Germany model
  IT: Italian model

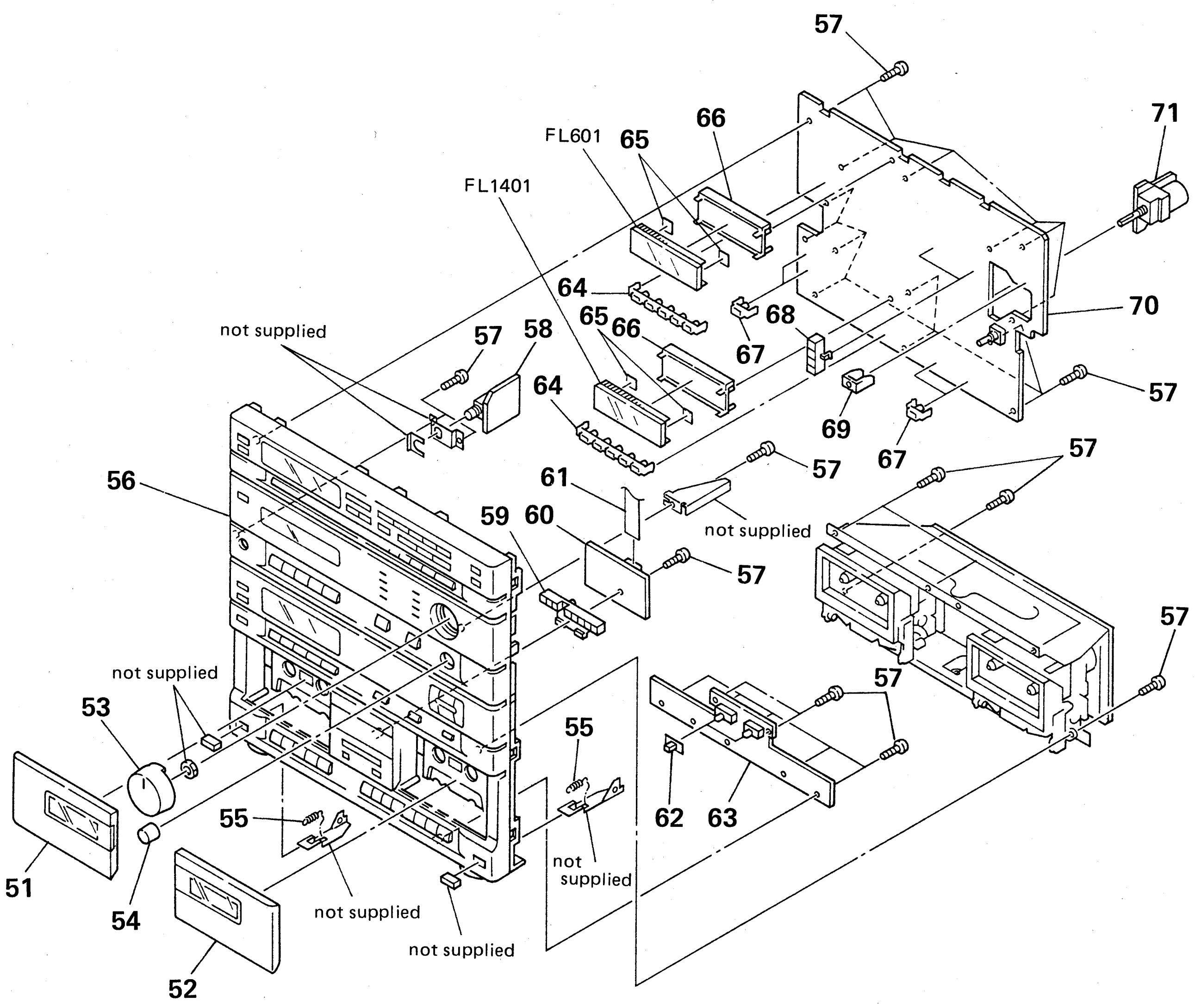
4-1. CABINET SECTION



Ref. No.	Part No.	Description	Remark
1	＊ 4-943-170-52	CASE (IT)	
1	＊ 4-943-170-11	CASE (AEP, UK, G)	
2	4-929-973-01	SCREW (CASE, 3 POINT)	
3	3-363-099-01	SCREW (CASE +3X8 TP2)	
4	1-533-217-31	HOLDER, FUSE	
5	＊ 1-638-298-11	POWER BOARD	
6	＊ A-4341-508-A	POWER AMPLIFIER BOARD, COMPLETE (AEP, UK)	
6	＊ A-4345-003-A	POWER AMPLIFIER BOARD, COMPLETE (G, IT)	
7	＊ 1-638-299-11	FUSE BOARD	
8	＊ 3-703-244-00	BUSHING (2104), CORD	
9	X-4941-228-1	FOOT ASSY	
10	1-590-578-11	WIRE, FLAT TYPE 19P	
11	1-590-577-11	WIRE, FLAT TYPE 17P	
12	1-590-576-11	WIRE, FLAT TYPE 11P	
13	＊ A-4341-999-A	MAIN BOARD, COMPLETE (G, IT)	
13	＊ A-4341-505-A	MAIN BOARD, COMPLETE (AEP, UK)	

Ref. No.	Part No.	Description	Remark
14	＊ 4-943-135-01	PANEL, BACK (UK)	
14	＊ 4-943-135-21	PANEL, BACK (AEP)	
14	＊ 4-943-135-41	PANEL, BACK (IT)	
14	＊ 4-943-135-31	PANEL, BACK (G)	
15	＊ 2-379-614-01	HOOK	
16	＊ 4-942-204-01	PLATE, GROUND	
CN1301	⚠1-555-750-00	CORD, POWER (AEP, G, IT)	
CN1301	⚠1-556-035-00	CORD, POWER (UK)	
CN1302	⚠1-526-794-11	OUTLET, AC (AC OUTLET) (AEP, G, IT)	
CN1302	⚠1-526-751-00	OUTLET, AC (AC OUTLET) (UK)	
F1301	⚠1-532-388-51	FUSE (2.0A)	
F1302	⚠1-532-350-00	FUSE (4.0A)	
F1303	⚠1-532-350-00	FUSE (4.0A)	
F1304	⚠1-532-388-51	FUSE (2.0A)	
F1305	⚠1-532-388-51	FUSE (2.0A)	
T1301	⚠1-450-398-11	TRANSFORMER, POWER	
T1302	⚠1-450-397-11	TRANSFORMER, POWER	

4-2. FRONT PANEL SECTION

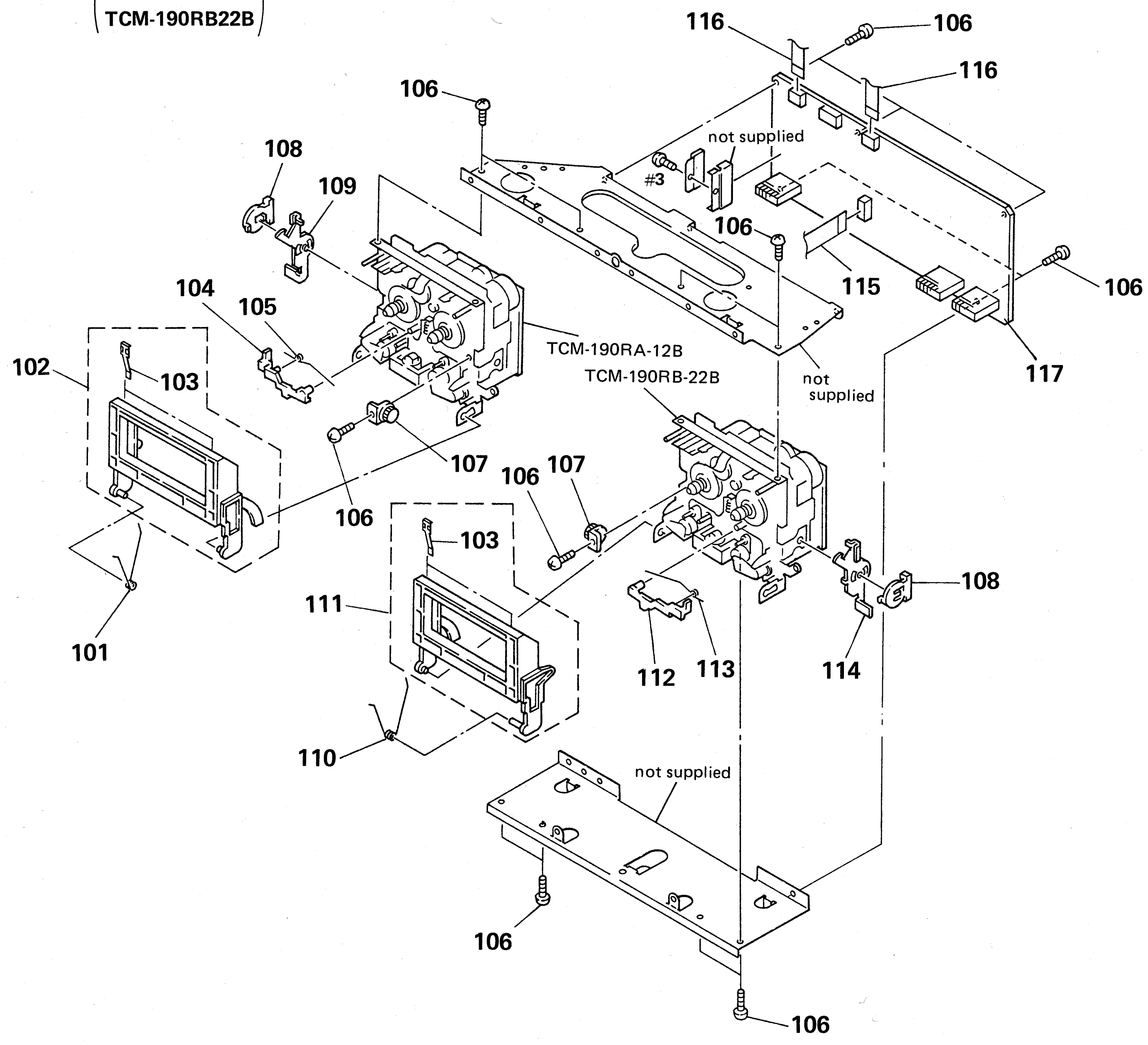


Ref. No.	Part No.	Description	Remark
51	A-4323-969-A	LID (A) ASSY, CASSETTE (IT)	
51	A-4323-817-A	LID (A) ASSY, CASSETTE (AEP, G, UK)	
52	A-4323-970-A	LID (B) ASSY, CASSETTE (IT)	
52	A-4323-818-A	LID (B) ASSY, CASSETTE (AEP, G, UK)	
53	A-4323-382-A	KNOB (VO) ASSY	
54	4-942-282-01	KNOB (B)	
55	4-885-182-11	SPRING, TENSION	
56	A-4323-819-A	PANEL ASSY, FRONT (AEP, G, UK)	
56	A-4323-971-A	PANEL ASSY, FRONT (IT)	
57	4-928-635-01	SCREW, +BV (2.6X8) TAPPING	
58	＊ 1-638-303-11	HP BOARD	
59	＊ 4-943-502-01	HOLDER (TC), LED	
60	＊ 1-638-023-11	DISPLAY BOARD	

Ref. No.	Part No.	Description	Remark
61	1-590-575-12	WIRE, FLAT TYPE 11P	
62	4-943-494-01	KNOB	
63	＊ 1-638-022-11	CONTROL SW BOARD	
64	＊ 4-943-499-01	HOLDER (A) (EQ), LED	
65	＊ 4-921-941-01	CUSHION (FL)	
66	＊ 4-942-301-01	HOLDER, FL TUBE	
67	＊ 4-943-500-01	HOLDER (B) (EQ), LED	
68	＊ 4-943-501-01	HOLDER (4 GANG), LED	
69	＊ 4-930-781-11	HOLDER (VOL), LED	
70	＊ A-4341-509-A	PANEL BOARD, COMPLETE (AEP, UK)	
70	＊ A-4345-004-A	PANEL BOARD, COMPLETE (G)	
70	＊ A-4345-007-A	PANEL BOARD, COMPLETE (IT)	
71	＊ 1-638-304-11	VOL BOARD	

4-3. MECHANISM SECTION (1)

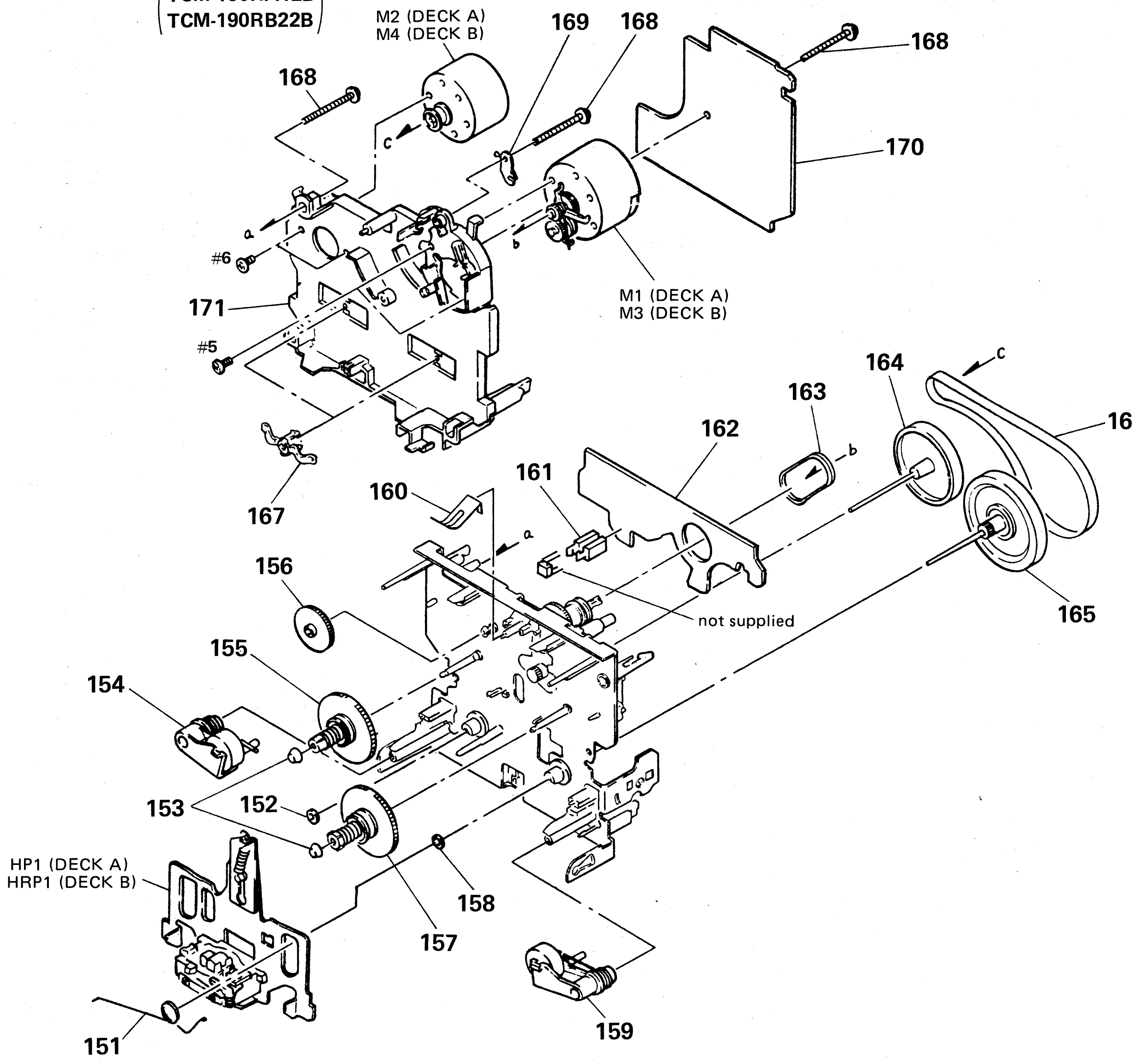
(TCM-190RA12B
TCM-190RB22B)


116
106
116
106
108
109
not supplied
#3
106
115
106
104
105
TCM-190RA-12B
TCM-190RB-22B
not
supplied
117
102
103
107
106
107
106
103
108
111
112
113
114
101
110
not supplied
106
106

Ref. No.	Part No.	Description	Remark
101	3-354-959-01	SPRING (LOADING L), TORSION	
102	X-3340-194-1	HOLDER (L) ASSY, CASSETTE	
103	3-308-823-11	SPRING	
104	3-354-955-01	LEVER (EJ SAFTY LEVER L)	
105	3-354-961-01	SPRING (EJ SAFTY SPRING L)	
106	4-928-635-01	SCREW, +BV (2.6X8) TAPPING	
107	3-354-963-01	DAMPER	
108	3-354-957-01	JOINT (LOCK LEVER)	
109	* 3-354-953-01	LEVER (LOCK LEVER L)	
110	3-354-960-01	SPRING (LOADING R), TORSION	
111	X-3340-195-1	HOLDER (R) ASSY, CASSETTE	
112	3-354-956-01	LEVER (EJ SAFTY LEVER R)	
113	3-354-962-01	SPRING (EJ SAFTY SPRING R)	
114	* 3-354-954-01	LEVER (LOCK LEVER R)	
115	1-590-459-11	WIRE, FLAT TYPE	
116	1-590-574-11	WIRE, FLAT TYPE 7P	
117	* A-4341-504-A	TC SIGNAL BOARD, COMPLETE	

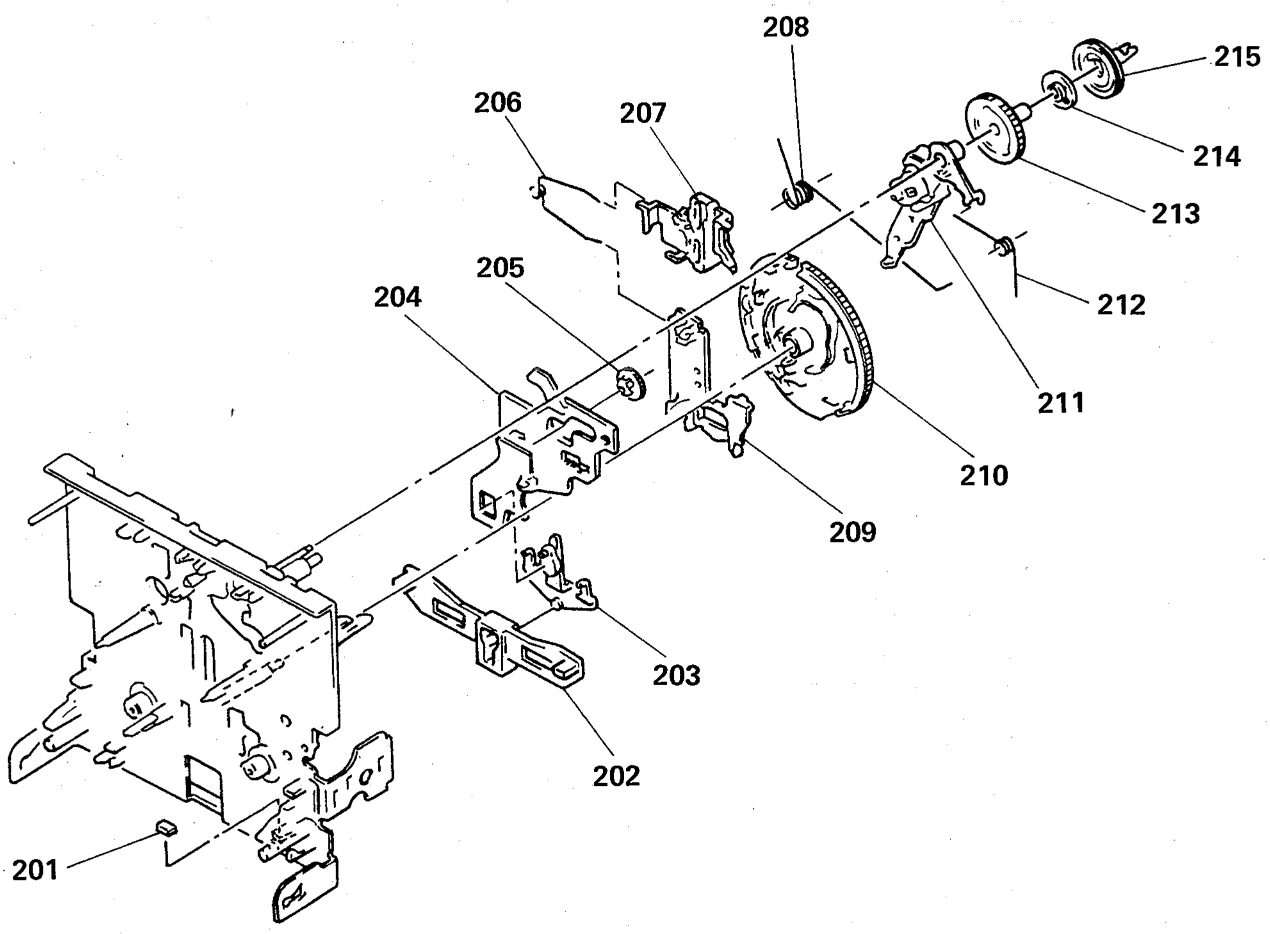
4-4. MECHANISM DECK SECTION (2)

(TCM-190RA12B
TCM-190RB22B)


M2 (DECK A)
M4 (DECK B)
169
168
168
168
170
c
a
b
#6
171
M1 (DECK A)
M3 (DECK B)
#5
164
c
163
b
166
162
161
160
a
167
156
not supplied
165
155
154
153
152
HP1 (DECK A)
HRP1 (DECK B)
158
157
151
159

Ref. No.	Part No.	Description	Remark
151	3-359-455-01	SPRING, TORSION	
152	3-356-714-01	WASHER	
153	3-362-308-01	CAP (REEL)	
154	X-3359-409-1	LEVER (PINCH LEVER REV) ASSY	
155	X-3362-078-1	TABLE ASSY (B), REEL	
156	3-359-424-01	GEAR (REV GEAR)	
157	X-3359-404-1	TABLE ASSY, REEL	
158	3-356-713-01	WASHER	
159	X-3359-408-1	LEVER (PINCH LEVER FWD) ASSY	
160	3-359-430-01	SPRING (CASSETTE RETAINER), LEAF	
161	3-343-419-01	HOLDER (S SENSER A)	
162	* 1-638-020-11	LEAF SW BOARD (DECK A)	
162	* 1-638-020-11	LEAF SW BOARD (DECK B)	
163	3-359-466-01	BELT (FR), SQUARE	
164	X-3359-410-1	FLYWHEEL (REV) ASSY	
165	X-3359-406-1	FLYWHEEL (FWD) COMPLETE ASSY	
166	3-359-417-01	BELT (FLAT), CAPSTAN	
167	3-575-321-00	RETAINER, THRUST, CAPSTAN	
168	3-359-414-01	SCREW (+PTPWH 2X23)	
169	3-359-450-01	PLATE, GROUND	
170	* 1-638-019-11	MD-A BOARD (DECK A)	
170	* A-2006-446-A	MD-B BOARD, COMPLETE (DECK B)	
171	* 3-359-436-11	BASE (THRUST RETAINER), FITTING	
HP1	A-2003-757-A	BASE ASSY, HEAD (DECK A)	
HRP1	A-2003-760-A	BASE ASSY, HEAD (DECK B)	
M1	X-3359-415-1	REEL MOTOR ASSY (DECK A)	
M2	X-3359-417-1	CAPSTAN MOTOR ASSY (DECK A)	
M3	X-3359-415-1	REEL MOTOR ASSY (DECK B)	
M4	X-3359-417-1	CAPSTAN MOTOR ASSY (DECK B)	

4-5. MECHANISM DECK SECTION (3)
(TCM-190RA-12B
TCM-190RB-22B)



Ref. No.	Part No.	Description	Remark
201	3-359-469-01	SPACER	
202	* 3-359-425-01	SLIDER (REVERSE SLIDER)	
203	3-359-426-01	LEVER (REVERSE LEVER)	
204	* 3-359-415-01	SLIDER (TRIGGER SLIDER)	
205	3-359-448-01	GEAR (TRIGGER)	
206	3-359-454-01	SPRING, TORSION	
207	3-359-429-01	SLIDER (BRAKE PLATE)	
208	3-359-456-01	SPRING (TRIGGER SPRING), TORSION	
209	* 3-359-427-01	SLIDER (LEVERSE SLIDER)	
210	3-359-420-01	GEAR (CAM GEAR)	
211	X-3359-405-1	LEVER (FR ARM) ASSY	
212	3-359-453-01	SPRING (FR ARM), TORSION	
213	3-359-419-01	GEAR (FR GEAR)	
214	3-359-421-01	CLUTCH (REEL DISK)	
215	3-359-418-01	PULLEY (FR PULLEY)	

SECTION 5
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- –XX, –X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA...: μA..., uPA...: μPA...,
  uPB...: μPB..., uPC...: μPC...,
  uPD...: μPD...
- CAPACITORS
  uF: μF
- COILS
  uH: μH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- Abbreviation
  G: Germany model
  IT: Italian model

Ref. No.	Part No.	Description			Remark
	* A-4341-505-A	MAIN BOARD, COMPLETE (AEP, UK)			
	* A-4341-999-A	MAIN BOARD, COMPLETE (G, IT)			
	* A-4341-508-A	POWER AMPLIFIER BOARD, COMPLETE (AEP, UK)			
	* A-4345-003-A	POWER AMPLIFIER BOARD, COMPLETE (G, IT)			
		*************************************			
	4-352-844-01	PIN, LEAD, COATING			
	* 4-942-204-01	PLATE, GROUND			
	7-682-548-04	SCREW +BVTT 3X8 (S)			
		< CAPACITOR >			
C301	1-161-379-00	CERAMIC	0.01uF	20%	25V (G, IT)
C302	1-124-477-11	ELECT	47uF	20%	25V
C303	1-161-379-00	CERAMIC	0.01uF	20%	25V
C305	1-161-379-00	CERAMIC	0.01uF	20%	25V (G, IT)
C306	1-161-379-00	CERAMIC	0.01uF	20%	25V (G, IT)
C307	1-161-379-00	CERAMIC	0.01uF	20%	25V
C308	1-161-379-00	CERAMIC	0.01uF	20%	25V
C309	1-161-379-00	CERAMIC	0.01uF	20%	25V
C310	1-124-477-11	ELECT	47uF	20%	25V
C311	1-161-379-00	CERAMIC	0.01uF	20%	25V
C312	1-101-006-00	CERAMIC	0.047uF		50V
C313	1-123-382-00	ELECT	3.3uF	20%	100V
C314	1-161-379-00	CERAMIC	0.01uF	20%	25V
C315	1-161-329-00	CERAMIC	0.0068uF	30%	16V
C316	1-162-282-31	CERAMIC	100PF	10%	50V (AEP, UK)
C316	1-162-290-31	CERAMIC	470PF	10%	50V (G, IT)
C317	1-162-292-31	CERAMIC	680PF	10%	50V (G, IT)
C318	1-124-903-11	ELECT	1uF	20%	50V
C320	1-124-903-11	ELECT	1uF	20%	50V
C321	1-124-902-00	ELECT	0.47uF	20%	50V
C322	1-124-463-00	ELECT	0.1uF	20%	50V
C323	1-161-329-00	CERAMIC	0.0068uF	30%	16V
C324	1-161-329-00	CERAMIC	0.0068uF	30%	16V
C325	1-124-477-11	ELECT	47uF	20%	25V
C326	1-124-907-11	ELECT	10uF	20%	50V
C327	1-161-379-00	CERAMIC	0.01uF	20%	25V
C328	1-124-463-00	ELECT	0.1uF	20%	50V
C329	1-124-927-11	ELECT	4.7uF	20%	100V
C330	1-161-379-00	CERAMIC	0.01uF	20%	25V
C331	1-126-176-11	ELECT	220uF	20%	10V
C332	1-161-379-00	CERAMIC	0.01uF	20%	25V
C333	1-161-379-00	CERAMIC	0.01uF	20%	25V (G, IT)
C335	1-161-379-00	CERAMIC	0.01uF	20%	25V
C336	1-161-379-00	CERAMIC	0.01uF	20%	25V
C339	1-162-210-31	CERAMIC	30PF	5%	50V
C341	1-123-382-00	ELECT	3.3uF	20%	100V
C342	1-123-382-00	ELECT	3.3uF	20%	100V
C343	1-123-382-00	ELECT	3.3uF	20%	100V
C344	1-123-382-00	ELECT	3.3uF	20%	100V
C345	1-161-375-00	CERAMIC	0.0022uF	20%	50V
C346	1-161-375-00	CERAMIC	0.0022uF	20%	50V
C351	1-161-494-00	CERAMIC	0.022uF		25V
C352	1-102-120-00	CERAMIC	0.0018uF	10%	50V
C353	1-161-374-11	CERAMIC	0.0015uF	20%	50V
C354	1-161-494-00	CERAMIC	0.022uF		25V
C361	1-164-098-11	CERAMIC	0.047uF		12V
C362	1-161-494-00	CERAMIC	0.022uF		25V
C363	1-164-159-11	CERAMIC	0.1uF		50V
C364	1-161-494-00	CERAMIC	0.022uF		25V
C501	1-102-961-00	CERAMIC	27PF	5%	50V
C502	1-102-961-00	CERAMIC	27PF	5%	50V

Ref. No.	Part No.	Description			Remark
C503	1-124-477-11	ELECT	47uF	20%	25V
C504	1-161-379-00	CERAMIC	0.01uF	20%	25V
C505	1-161-379-00	CERAMIC	0.01uF	20%	25V
C506	1-161-379-00	CERAMIC	0.01uF	20%	25V
C507	1-161-379-00	CERAMIC	0.01uF	20%	25V
C521	1-124-925-11	ELECT	2.2uF	20%	100V
C522	1-124-463-00	ELECT	0.1uF	20%	50V
C523	1-161-379-00	CERAMIC	0.01uF	20%	25V
C524	1-161-379-00	CERAMIC	0.01uF	20%	25V
C525	1-124-477-11	ELECT	47uF	20%	25V
C530	1-161-379-00	CERAMIC	0.01uF	20%	25V
C531	1-136-173-00	FILM	0.47uF	5%	50V
C532	1-161-494-00	CERAMIC	0.022uF		25V
C533	1-124-463-00	ELECT	0.1uF	20%	50V
C1001	1-124-925-11	ELECT	2.2uF	20%	100V
C1002	1-162-282-31	CERAMIC	100PF	10%	50V
C1003	1-162-282-31	CERAMIC	100PF	10%	50V
C1004	1-124-477-11	ELECT	47uF	20%	25V
C1005	1-161-377-00	CERAMIC	0.0047uF	20%	16V
C1006	1-161-374-11	CERAMIC	0.0015uF	20%	50V
C1007	1-124-464-11	ELECT	0.22uF	20%	50V
C1008	1-124-477-11	ELECT	47uF	20%	25V
C1009	1-124-477-11	ELECT	47uF	20%	25V
C1010	1-124-925-11	ELECT	2.2uF	20%	100V
C1011	1-162-286-31	CERAMIC	220PF	10%	50V(G, IT)
C1012	1-124-925-11	ELECT	2.2uF	20%	100V
C1013	1-162-290-31	CERAMIC	470PF	10%	50V(G, IT)
C1014	1-161-494-00	CERAMIC	0.022uF		25V
C1015	1-161-494-00	CERAMIC	0.022uF		25V
C1016	1-162-286-31	CERAMIC	220PF	10%	50V(G, IT)
C1051	1-124-925-11	ELECT	2.2uF	20%	100V
C1052	1-162-282-31	CERAMIC	100PF	10%	50V
C1053	1-162-282-31	CERAMIC	100PF	10%	50V
C1054	1-124-477-11	ELECT	47uF	20%	25V
C1055	1-161-377-00	CERAMIC	0.0047uF	20%	16V
C1056	1-161-374-11	CERAMIC	0.0015uF	20%	50V
C1057	1-124-464-11	ELECT	0.22uF	20%	50V
C1058	1-124-477-11	ELECT	47uF	20%	25V
C1059	1-124-477-11	ELECT	47uF	20%	25V
C1060	1-124-925-11	ELECT	2.2uF	20%	100V
C1061	1-162-286-31	CERAMIC	220PF	10%	50V(G, IT)
C1062	1-124-925-11	ELECT	2.2uF	20%	100V
C1063	1-162-290-31	CERAMIC	470PF	10%	50V(G, IT)
C1064	1-161-494-00	CERAMIC	0.022uF		25V
C1065	1-161-494-00	CERAMIC	0.022uF		25V
C1066	1-162-286-31	CERAMIC	220PF	10%	50V(G, IT)
C1101	1-124-925-11	ELECT	2.2uF	20%	100V
C1102	1-162-282-31	CERAMIC	100PF	10%	50V
C1103	1-162-282-31	CERAMIC	100PF	10%	50V
C1104	1-124-907-11	ELECT	10uF	20%	50V
C1105	1-124-252-00	ELECT	0.33uF	20%	50V
C1106	1-136-160-00	FILM	0.039uF	5%	50V
C1107	1-124-477-11	ELECT	47uF	20%	25V
C1108	1-161-494-00	CERAMIC	0.022uF		25V
C1120	1-162-294-31	CERAMIC	0.001uF	10%	50V
C1121	1-162-286-31	CERAMIC	220PF	10%	50V
C1122	1-124-907-11	ELECT	10uF	20%	50V
C1123	1-124-903-11	ELECT	1uF	20%	50V
C1124	1-136-163-00	FILM	0.068uF	5%	50V
C1125	1-124-902-00	ELECT	0.47uF	20%	50V
C1126	1-136-158-00	FILM	0.027uF	5%	50V
C1127	1-136-168-00	FILM	0.18uF	5%	50V
C1128	1-136-153-00	FILM	0.01uF	5%	50V
C1129	1-136-163-00	FILM	0.068uF	5%	50V
C1130	1-130-478-00	MYLAR	0.0039uF	5%	50V
C1131	1-136-159-00	FILM	0.033uF	5%	50V
C1132	1-130-474-00	MYLAR	0.0018uF	5%	50V
C1133	1-136-154-00	FILM	0.012uF	5%	50V
C1134	1-162-292-31	CERAMIC	680PF	10%	50V
C1135	1-161-377-00	CERAMIC	0.0047uF	20%	16V
C1136	1-162-287-31	CERAMIC	270PF	10%	50V
C1137	1-124-477-11	ELECT	47uF	20%	25V
C1138	1-124-477-11	ELECT	47uF	20%	25V
C1139	1-161-494-00	CERAMIC	0.022uF		25V
C1140	1-161-494-00	CERAMIC	0.022uF		25V
C1151	1-124-925-11	ELECT	2.2uF	20%	100V
C1152	1-162-282-31	CERAMIC	100PF	10%	50V
C1153	1-162-282-31	CERAMIC	100PF	10%	50V
C1154	1-124-907-11	ELECT	10uF	20%	50V
C1155	1-124-252-00	ELECT	0.33uF	20%	50V
C1156	1-136-160-00	FILM	0.039uF	5%	50V
C1157	1-124-477-11	ELECT	47uF	20%	25V
C1158	1-161-494-00	CERAMIC	0.022uF		25V
C1170	1-162-294-31	CERAMIC	0.001uF	10%	50V
C1171	1-162-286-31	CERAMIC	220PF	10%	50V
C1172	1-124-907-11	ELECT	10uF	20%	50V
C1173	1-124-903-11	ELECT	1uF	20%	50V
C1174	1-136-163-00	FILM	0.068uF	5%	50V
C1175	1-124-902-00	ELECT	0.47uF	20%	50V
C1176	1-136-158-00	FILM	0.027uF	5%	50V
C1177	1-136-168-00	FILM	0.18uF	5%	50V
C1178	1-136-153-00	FILM	0.01uF	5%	50V
C1179	1-136-163-00	FILM	0.068uF	5%	50V
C1180	1-130-478-00	MYLAR	0.0039uF	5%	50V
C1181	1-136-159-00	FILM	0.033uF	5%	50V

MAIN POWER AMP

Ref. No.	Part No.	Description			Remark
C1182	1-130-474-00	MYLAR	0.0018uF	5%	50V
C1183	1-136-154-00	FILM	0.012uF	5%	50V
C1184	1-162-292-31	CERAMIC	680PF	10%	50V
C1185	1-161-377-00	CERAMIC	0.0047uF	20%	16V
C1186	1-162-287-31	CERAMIC	270PF	10%	50V
C1187	1-124-477-11	ELECT	47uF	20%	25V
C1188	1-124-477-11	ELECT	47uF	20%	25V
C1189	1-161-494-00	CERAMIC	0.022uF		25V
C1201	1-124-925-11	ELECT	2.2uF	20%	100V
C1202	1-162-286-31	CERAMIC	220PF	10%	50V (AEP, UK)
C1202	1-162-290-31	CERAMIC	470PF	10%	50V (G, IT)
C1203	1-162-286-31	CERAMIC	220PF	10%	50V (AEP, UK)
C1203	1-162-290-31	CERAMIC	470PF	10%	50V (G, IT)
C1204	1-124-477-11	ELECT	47uF	20%	25V
C1205	1-124-910-11	ELECT	47uF	20%	50V
C1206	1-124-122-11	ELECT	100uF	20%	50V
C1207	1-136-165-00	FILM	0.1uF	5%	50V
C1208	1-126-233-11	ELECT	22uF	20%	50V
C1209	1-136-165-00	FILM	0.1uF	5%	50V
C1210	1-136-163-00	FILM	0.068uF	5%	50V
C1211	1-136-163-00	FILM	0.068uF	5%	50V
C1212	1-126-233-11	ELECT	22uF	20%	50V
C1213	1-126-233-11	ELECT	22uF	20%	50V
C1214	1-101-006-00	CERAMIC	0.047uF		50V
C1216	1-161-494-00	CERAMIC	0.022uF		25V (G, IT)
C1220	1-124-910-11	ELECT	47uF	20%	50V
C1221	1-126-101-11	ELECT	100uF	20%	16V
C1222	1-126-176-11	ELECT	220uF	20%	10V
C1223	1-126-176-11	ELECT	220uF	20%	10V
C1230	1-161-494-00	CERAMIC	0.022uF		25V (G, IT)
C1231	1-161-494-00	CERAMIC	0.022uF		25V (G, IT)
C1232	1-161-494-00	CERAMIC	0.022uF		25V (G, IT)
C1233	1-161-494-00	CERAMIC	0.022uF		25V (G, IT)
C1251	1-124-925-11	ELECT	2.2uF	20%	100V
C1252	1-162-286-31	CERAMIC	220PF	10%	50V (AEP, UK)
C1252	1-162-290-31	CERAMIC	470PF	10%	50V (G, IT)
C1253	1-162-286-31	CERAMIC	220PF	10%	50V (AEP, UK)
C1253	1-162-290-31	CERAMIC	470PF	10%	50V (G, IT)
C1254	1-124-477-11	ELECT	47uF	20%	25V
C1255	1-124-910-11	ELECT	47uF	20%	50V
C1256	1-124-122-11	ELECT	100uF	20%	50V
C1257	1-136-165-00	FILM	0.1uF	5%	50V
C1260	1-136-163-00	FILM	0.068uF	5%	50V
C1261	1-136-163-00	FILM	0.068uF	5%	50V
C1262	1-126-233-11	ELECT	22uF	20%	50V
C1263	1-126-233-11	ELECT	22uF	20%	50V
C1264	1-101-006-00	CERAMIC	0.047uF		50V
C1266	1-161-494-00	CERAMIC	0.022uF		25V (G, IT)
C1280	1-161-494-00	CERAMIC	0.022uF		25V (G, IT)
C1302	1-102-394-11	CERAMIC	0.01uF		250V
C1303	1-136-165-00	FILM	0.1uF	5%	50V
C1304	1-136-165-00	FILM	0.1uF	5%	50V
C1305	1-126-224-11	ELECT	4700uF	20%	42V
C1306	1-126-224-11	ELECT	4700uF	20%	42V
C1307	1-124-903-11	ELECT	1uF	20%	50V
C1308	1-102-394-11	CERAMIC	0.01uF		250V
C1309	1-124-122-11	ELECT	100uF	20%	50V
C1310	1-124-122-11	ELECT	100uF	20%	50V
C1311	1-126-105-11	ELECT	1000uF	20%	35V
C1312	1-126-101-11	ELECT	100uF	20%	16V
C1313	1-124-477-11	ELECT	47uF	20%	25V
C1314	1-124-122-11	ELECT	100uF	20%	50V
C1315	1-126-101-11	ELECT	100uF	20%	16V
C1317	1-124-563-11	ELECT	2200uF	20%	25V
C1318	1-124-563-11	ELECT	2200uF	20%	25V
C1319	1-124-907-11	ELECT	10uF	20%	50V
C1320	1-124-907-11	ELECT	10uF	20%	50V
C1325	1-126-103-11	ELECT	470uF	20%	16V
C1326	1-124-893-11	ELECT	2200uF	20%	10V
C1326	1-124-907-11	ELECT	10uF	20%	50V
C1328	1-124-893-11	ELECT	2200uF	20%	10V
C1346	1-124-477-11	ELECT	47uF	20%	25V

< FILTER >

CF301	1-567-389-11	FILTER, CERAMIC
CF302	1-567-389-11	FILTER, CERAMIC (G, IT)
CF303	1-567-389-11	FILTER, CERAMIC
CF304	1-577-075-11	OSCILLATOR, CERAMIC

< CONNECTOR >

CN501	* 1-568-830-11	SOCKET, CONNECTOR 11P
CN1001	* 1-580-691-11	JACK, PIN 2P (PHONO)
CN1002	* 1-580-912-11	JACK, PIN 4P (CD/VIDEO)
CN1003	* 1-564-508-11	PLUG, CONNECTOR 5P
CN1004	* 1-568-836-11	SOCKET, CONNECTOR 17P
CN1201	* 1-569-130-11	JACK, PIN 2P (SURROUND)
CN1203	* 1-564-506-11	PLUG, CONNECTOR 3P
CN1204	* 1-564-510-11	PLUG, CONNECTOR 7P
CN1302	* 1-566-210-11	PIN, CONNECTOR 3P
CN1303	* 1-564-509-11	PLUG, CONNECTOR 6P
CN1304	* 1-568-934-11	PIN, CONNECTOR 7P
CN1305	* 1-568-830-11	SOCKET, CONNECTOR 11P
CN1306	1-568-802-11	SOCKET, CONNECTOR 19P

Ref. No.	Part No.	Description	Remark
		< COMPOSITION CIRCUIT BLOCK >	
CP1101	1-239-053-11	COMPOSITION CIRCUIT BLOCK	
CP1151	1-239-053-11	COMPOSITION CIRCUIT BLOCK	
		< DIODE >	
D351	8-719-987-63	DIODE 1N4148M	
D1201	8-719-987-63	DIODE 1N4148M	
D1202	8-719-987-63	DIODE 1N4148M	
D1203	8-719-987-63	DIODE 1N4148M	
D1204	8-719-987-63	DIODE 1N4148M	
D1251	8-719-987-63	DIODE 1N4148M	
D1303	8-719-987-63	DIODE 1N4148M	
D1304	8-719-987-63	DIODE 1N4148M	
D1305	8-719-312-09	DIODE RBA-402	
D1306	8-719-200-82	DIODE 11ES2	
D1307	8-719-200-82	DIODE 11ES2	
D1308	8-719-200-82	DIODE 11ES2	
D1309	8-719-200-82	DIODE 11ES2	
D1310	8-719-200-82	DIODE 11ES2	
D1311	8-719-200-82	DIODE 11ES2	
D1312	8-719-200-82	DIODE 11ES2	
D1313	8-719-200-82	DIODE 11ES2	
D1314	8-719-001-76	DIODE UZL-12M3	
D1315	8-719-200-82	DIODE 11ES2	
D1316	8-719-200-82	DIODE 11ES2	
D1331	8-719-200-82	DIODE 11ES2	
		< FRONT END >	
FE301	1-463-857-21	FRONT END (FM) (G, IT)	
FE301	1-465-006-11	FRONT END (FM) (2 GANG) (AEP, UK)	
FE351	1-236-463-11	ENCAPSULATED COMPONENT	
FE352	1-236-462-11	ENCAPSULATED COMPONENT	
		< IC >	
IC301	8-759-821-45	IC LA1851N	
IC501	8-759-820-91	IC LC7218	
IC1001	8-759-634-51	IC M5218AP	
IC1002	8-759-000-48	IC MC14052BCP	
IC1003	8-759-000-49	IC MC14066BCP	
IC1004	8-759-634-51	IC M5218AP	
IC1005	8-759-000-49	IC MC14066BCP	
IC1101	8-759-634-51	IC M5218AP	
IC1102	8-759-000-48	IC MC14052BCP	
IC1103	8-759-000-48	IC MC14052BCP	
IC1104	8-759-804-49	IC LC7522	
IC1105	8-759-633-78	IC M5289P	
IC1155	8-759-633-78	IC M5289P	
IC1201	8-749-900-96	IC STK4142MK2	

Ref. No.	Part No.	Description	Remark
IC1202	8-759-111-68	IC uPC1237HA	
IC1301	8-759-604-33	IC M5F7812L	
IC1302	8-759-604-86	IC M5F7807	
IC1303	8-759-604-90	IC M5F7907	
IC1304	8-759-604-29	IC M5F7805L	
		< TRANSFORMER >	
IFT301	1-404-713-11	TRANSFORMER, IF	
		< COIL >	
L301	1-407-500-00	INDUCTOR 4.7mH	
L351	1-410-524-41	INDUCTOR 220uH	
L1201	* 1-420-872-00	COIL, AIR CORE	
L1251	* 1-420-872-00	COIL, AIR CORE	
L1301	1-408-117-00	INDUCTOR 10uH (G, IT)	
L1302	1-408-117-00	INDUCTOR 10uH (G, IT)	
		< FILTER >	
LPF301	1-235-164-00	FILTER, LOW PASS	
LPF302	1-235-164-00	FILTER, LOW PASS	
		< TRANSISTOR >	
Q301	8-729-230-XX	TRANSISTOR 2SC2669-OY (G, IT)	
Q302	8-729-230-XX	TRANSISTOR 2SC2669-OY (G, IT)	
Q303	8-729-230-XX	TRANSISTOR 2SC2669-OY	
Q304	8-729-230-XX	TRANSISTOR 2SC2669-OY	
Q305	8-729-900-80	TRANSISTOR DTC114ES	
Q306	8-729-900-61	TRANSISTOR DTA114ES	
Q307	8-729-900-80	TRANSISTOR DTC114ES	
Q308	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q309	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q351	8-729-900-80	TRANSISTOR DTC114ES	
Q352	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q353	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q354	8-729-900-80	TRANSISTOR DTC114ES	
Q355	8-729-900-80	TRANSISTOR DTC114ES	
Q356	8-729-900-80	TRANSISTOR DTC114ES	
Q501	8-729-900-80	TRANSISTOR DTC114ES	
Q502	8-729-900-61	TRANSISTOR DTA114ES	
Q521	8-729-202-67	TRANSISTOR 2SK246-GR3	
Q522	8-729-201-84	TRANSISTOR 2SC3112-B	
Q531	8-729-202-67	TRANSISTOR 2SK246-GR3	
Q532	8-729-201-84	TRANSISTOR 2SC3112-B	
Q1001	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q1002	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1004	8-729-900-36	TRANSISTOR DTC124ES	
Q1005	8-729-119-76	TRANSISTOR 2SA1175-HFE	

MAIN POWER AMP

Ref. No.	Part No.	Description			Remark
Q1006	8-729-900-36	TRANSISTOR DTC124ES			
Q1101	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q1151	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q1201	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA			
Q1202	8-729-900-80	TRANSISTOR DTC114ES			
Q1203	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q1204	8-729-900-63	TRANSISTOR DTA124ES			
Q1251	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA			
Q1301	8-729-209-15	TRANSISTOR 2SD2012			
		< RESISTOR >			
R301	⚠ 1-249-401-11	CARBON	47	5%	1/4W
R302	1-249-413-11	CARBON	470	5%	1/4W
R303	1-249-411-11	CARBON	330	5%	1/4W(G, IT)
R304	1-249-432-11	CARBON	18K	5%	1/4W(G, IT)
R305	1-249-411-11	CARBON	330	5%	1/4W(G, IT)
R306	1-249-434-11	CARBON	27K	5%	1/4W(G, IT)
R307	1-249-414-11	CARBON	560	5%	1/4W(G, IT)
R308	1-249-411-11	CARBON	330	5%	1/4W
R309	1-249-432-11	CARBON	18K	5%	1/4W
R310	1-249-411-11	CARBON	330	5%	1/4W
R311	1-249-434-11	CARBON	27K	5%	1/4W
R312	1-249-414-11	CARBON	560	5%	1/4W (AEP, UK)
R312	1-249-416-11	CARBON	820	5%	1/4W (G, IT)
R313	⚠ 1-249-405-11	CARBON	100	5%	1/4W
R314	1-249-437-11	CARBON	47K	5%	1/4W(G, IT)
R315A	1-249-435-11	CARBON	33K	5%	1/4W(G, IT)
R315B	⚠ 1-249-404-00	CARBON	82	5%	1/4W
R316	1-249-429-11	CARBON	10K	5%	1/4W
R317	1-249-417-11	CARBON	1K	5%	1/4W
R318	1-249-435-11	CARBON	33K	5%	1/4W
R319	1-249-428-11	CARBON	8.2K	5%	1/4W
R320	1-249-432-11	CARBON	18K	5%	1/4W
R321	1-249-423-11	CARBON	3.3K	5%	1/4W
R322	1-249-429-11	CARBON	10K	5%	1/4W
R323	1-249-418-11	CARBON	1.2K	5%	1/4W (AEP, UK)
R323	1-249-417-11	CARBON	1K	5%	1/4W (G, IT)
R324	1-249-429-11	CARBON	10K	5%	1/4W
R325	1-249-429-11	CARBON	10K	5%	1/4W
R326	⚠ 1-249-409-11	CARBON	220	5%	1/4W
R327	1-249-437-11	CARBON	47K	5%	1/4W
R328	1-249-437-11	CARBON	47K	5%	1/4W
R331	1-247-891-00	CARBON	330K	5%	1/4W
R332	1-247-891-00	CARBON	330K	5%	1/4W
R333	1-249-421-11	CARBON	2.2K	5%	1/4W
R334	1-249-421-11	CARBON	2.2K	5%	1/4W
R335	1-249-420-11	CARBON	1.8K	5%	1/4W
R336	1-249-420-11	CARBON	1.8K	5%	1/4W
R337	1-249-426-11	CARBON	5.6K	5%	1/4W
R338	1-249-426-11	CARBON	5.6K	5%	1/4W
R351	1-249-433-11	CARBON	22K	5%	1/4W
R352	1-249-437-11	CARBON	47K	5%	1/4W
R353	1-247-903-00	CARBON	1M	5%	1/4W
R354	1-249-441-11	CARBON	100K	5%	1/4W
R355	1-249-433-11	CARBON	22K	5%	1/4W
R356	1-249-421-11	CARBON	2.2K	5%	1/4W
R361	1-249-437-11	CARBON	47K	5%	1/4W
R362	1-249-437-11	CARBON	47K	5%	1/4W
R363	1-249-425-11	CARBON	4.7K	5%	1/4W
R364	1-249-425-11	CARBON	4.7K	5%	1/4W
R365	1-249-429-11	CARBON	10K	5%	1/4W
R366	1-249-413-11	CARBON	470	5%	1/4W
R367	1-249-434-11	CARBON	27K	5%	1/4W
R368	1-249-433-11	CARBON	22K	5%	1/4W
R501	1-249-417-11	CARBON	1K	5%	1/4W
R502	1-249-417-11	CARBON	1K	5%	1/4W
R503	1-249-417-11	CARBON	1K	5%	1/4W
R504	1-249-417-11	CARBON	1K	5%	1/4W
R505	1-249-429-11	CARBON	10K	5%	1/4W
R506	1-249-417-11	CARBON	1K	5%	1/4W
R510	⚠ 1-249-401-11	CARBON	47	5%	1/4W
R511	1-249-429-11	CARBON	10K	5%	1/4W
R512	1-249-425-11	CARBON	4.7K	5%	1/4W
R513	1-249-417-11	CARBON	1K	5%	1/4W
R514	1-249-429-11	CARBON	10K	5%	1/4W
R515	1-249-417-11	CARBON	1K	5%	1/4W
R521	1-249-423-11	CARBON	3.3K	5%	1/4W
R522	1-249-425-11	CARBON	4.7K	5%	1/4W
R523	1-249-414-11	CARBON	560	5%	1/4W
R524	1-249-417-11	CARBON	1K	5%	1/4W
R525	1-249-410-11	CARBON	270	5%	1/4W
R526	1-249-421-11	CARBON	2.2K	5%	1/4W
R527	1-249-425-11	CARBON	4.7K	5%	1/4W
R528	1-249-425-11	CARBON	4.7K	5%	1/4W
R529	1-249-405-11	CARBON	100	5%	1/4W
R530	⚠ 1-249-405-11	CARBON	100	5%	1/4W
R531	1-249-423-11	CARBON	3.3K	5%	1/4W
R532	1-249-433-11	CARBON	22K	5%	1/4W
R533	1-249-414-11	CARBON	560	5%	1/4W
R534	1-249-417-11	CARBON	1K	5%	1/4W
R535	1-249-410-11	CARBON	270	5%	1/4W
R536	1-249-421-11	CARBON	2.2K	5%	1/4W
R537	1-249-425-11	CARBON	4.7K	5%	1/4W
R538	1-249-405-11	CARBON	100	5%	1/4W
R1001	1-249-417-11	CARBON	1K	5%	1/4W(G, IT)
R1002	1-249-417-11	CARBON	1K	5%	1/4W

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description			Remark
R1003	1-249-441-11	CARBON	100K	5%	1/4W
R1004	1-249-416-11	CARBON	820	5%	1/4W
R1005	1-247-897-11	CARBON	560K	5%	1/4W
R1006	1-249-437-11	CARBON	47K	5%	1/4W
R1007	1-249-409-11	CARBON	220	5%	1/4W
R1008	1-249-441-11	CARBON	100K	5%	1/4W
R1009	1-249-409-11	CARBON	220	5%	1/4W
R1010	1-249-421-11	CARBON	2.2K	5%	1/4W
R1011	1-249-428-11	CARBON	8.2K	5%	1/4W
R1012	1-249-417-11	CARBON	1K	5%	1/4W
R1013	1-249-441-11	CARBON	100K	5%	1/4W
R1014	1-249-437-11	CARBON	47K	5%	1/4W
R1016	1-249-437-11	CARBON	47K	5%	1/4W
R1017	1-249-434-11	CARBON	27K	5%	1/4W
R1018	1-249-429-11	CARBON	10K	5%	1/4W
R1020	1-249-433-11	CARBON	22K	5%	1/4W
R1021	1-249-433-11	CARBON	22K	5%	1/4W
R1022	1-249-433-11	CARBON	22K	5%	1/4W
R1023	1-249-433-11	CARBON	22K	5%	1/4W
R1024	1-249-433-11	CARBON	22K	5%	1/4W
R1025	1-249-433-11	CARBON	22K	5%	1/4W
R1026	1-249-433-11	CARBON	22K	5%	1/4W
R1029	1-249-433-11	CARBON	22K	5%	1/4W
R1030	1-249-433-11	CARBON	22K	5%	1/4W
R1031	1-249-433-11	CARBON	22K	5%	1/4W
R1032	1-249-433-11	CARBON	22K	5%	1/4W
R1051	1-249-417-11	CARBON	1K	5%	1/4W (G, IT)
R1052	1-249-417-11	CARBON	1K	5%	1/4W
R1053	1-249-441-11	CARBON	100K	5%	1/4W
R1054	1-249-416-11	CARBON	820	5%	1/4W
R1055	1-247-897-11	CARBON	560K	5%	1/4W
R1056	1-249-437-11	CARBON	47K	5%	1/4W
R1057	1-249-409-11	CARBON	220	5%	1/4W
R1058	1-249-441-11	CARBON	100K	5%	1/4W
R1059	1-249-409-11	CARBON	220	5%	1/4W
R1060	1-249-421-11	CARBON	2.2K	5%	1/4W
R1061	1-249-428-11	CARBON	8.2K	5%	1/4W
R1062	1-249-417-11	CARBON	1K	5%	1/4W
R1063	1-249-441-11	CARBON	100K	5%	1/4W
R1064	1-249-437-11	CARBON	47K	5%	1/4W
R1066	1-249-437-11	CARBON	47K	5%	1/4W
R1067	1-249-434-11	CARBON	27K	5%	1/4W
R1068	1-249-429-11	CARBON	10K	5%	1/4W
R1101	1-249-441-11	CARBON	100K	5%	1/4W
R1102	1-249-417-11	CARBON	1K	5%	1/4W
R1103	1-249-441-11	CARBON	100K	5%	1/4W
R1104	1-249-429-11	CARBON	10K	5%	1/4W

Ref. No.	Part No.	Description			Remark
R1105	1-249-427-11	CARBON	6.8K	5%	1/4W
R1106	1-249-412-11	CARBON	390	5%	1/4W
R1107	1-249-423-11	CARBON	3.3K	5%	1/4W
R1108	1-249-441-11	CARBON	100K	5%	1/4W
R1109	1-249-427-11	CARBON	6.8K	5%	1/4W
R1110	1-249-441-11	CARBON	100K	5%	1/4W
R1111	1-249-431-11	CARBON	15K	5%	1/4W
R1112	1-249-423-11	CARBON	3.3K	5%	1/4W
R1113	1-249-429-11	CARBON	10K	5%	1/4W
R1114	1-249-435-11	CARBON	33K	5%	1/4W
R1115	1-249-432-11	CARBON	18K	5%	1/4W
R1116	1-249-433-11	CARBON	22K	5%	1/4W
R1117	1-249-433-11	CARBON	22K	5%	1/4W
R1118	1-249-433-11	CARBON	22K	5%	1/4W
R1119	1-249-433-11	CARBON	22K	5%	1/4W
R1120	1-249-427-11	CARBON	6.8K	5%	1/4W
R1127	1-249-417-11	CARBON	1K	5%	1/4W
R1128	1-249-417-11	CARBON	1K	5%	1/4W
R1130	1-249-441-11	CARBON	100K	5%	1/4W
R1151	1-249-441-11	CARBON	100K	5%	1/4W
R1152	1-249-417-11	CARBON	1K	5%	1/4W
R1153	1-249-441-11	CARBON	100K	5%	1/4W
R1154	1-249-429-11	CARBON	10K	5%	1/4W
R1155	1-249-427-11	CARBON	6.8K	5%	1/4W
R1156	1-249-412-11	CARBON	390	5%	1/4W
R1157	1-249-423-11	CARBON	3.3K	5%	1/4W
R1158	1-249-441-11	CARBON	100K	5%	1/4W
R1159	1-249-427-11	CARBON	6.8K	5%	1/4W
R1160	1-249-441-11	CARBON	100K	5%	1/4W
R1161	1-249-431-11	CARBON	15K	5%	1/4W
R1162	1-249-423-11	CARBON	3.3K	5%	1/4W
R1170	1-249-427-11	CARBON	6.8K	5%	1/4W
R1180	1-249-441-11	CARBON	100K	5%	1/4W
R1201	1-249-417-11	CARBON	1K	5%	1/4W
R1202	1-249-438-11	CARBON	56K	5%	1/4W
R1203	1-249-414-11	CARBON	560	5%	1/4W
R1204	1-249-438-11	CARBON	56K	5%	1/4W
R1205	1-249-425-11	CARBON	4.7K	5%	1/4W
R1206	1-249-425-11	CARBON	4.7K	5%	1/4W
R1207	1-249-425-11	CARBON	4.7K	5%	1/4W
R1208	1-249-425-11	CARBON	4.7K	5%	1/4W
R1209	⚠ 1-212-881-11	FUSIBLE	100	5%	1/4W F
R1210	⚠ 1-217-151-00	RES, METAL PLATE	0.22		
R1211	1-249-417-11	CARBON	1K	5%	1/4W
R1212	1-249-431-11	CARBON	15K	5%	1/4W
R1213	1-249-441-11	CARBON	100K	5%	1/4W
R1214	1-249-421-11	CARBON	2.2K	5%	1/4W
R1215	1-249-421-11	CARBON	2.2K	5%	1/4W
R1216	1-249-421-11	CARBON	2.2K	5%	1/4W

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

MAIN | POWER AMP | MD-A

Ref. No.		Part No.	Description			Remark
R1217		1-249-421-11	CARBON	2.2K	5%	1/4W
R1218		1-249-397-11	CARBON	22	5%	1/4W
R1219		1-249-397-11	CARBON	22	5%	1/4W
R1220		1-249-397-11	CARBON	22	5%	1/4W
R1221		1-249-397-11	CARBON	22	5%	1/4W
R1222		1-249-416-11	CARBON	820	5%	1/4W
R1223		1-249-416-11	CARBON	820	5%	1/4W
R1224		1-249-385-11	CARBON	2.2	5%	1/6W (G, IT)
R1225		1-249-385-11	CARBON	2.2	5%	1/6W (G, IT)
R1226	⚠	1-215-915-11	METAL OXIDE	470	5%	3W F
R1227		1-249-429-11	CARBON	10K	5%	1/4W
R1228		1-247-881-00	CARBON	120K	5%	1/4W
R1229		1-249-439-11	CARBON	68K	5%	1/4W
R1230		1-249-439-11	CARBON	68K	5%	1/4W
R1231		1-249-417-11	CARBON	1K	5%	1/4W
R1232		1-249-428-11	CARBON	8.2K	5%	1/4W
R1233		1-249-433-11	CARBON	22K	5%	1/4W
R1234		1-249-433-11	CARBON	22K	5%	1/4W
R1235		1-249-437-11	CARBON	47K	5%	1/4W
R1236		1-249-441-11	CARBON	100K	5%	1/4W
R1237		1-249-429-11	CARBON	10K	5%	1/4W
R1238		1-249-433-11	CARBON	22K	5%	1/4W
R1239		1-249-426-11	CARBON	5.6K	5%	1/4W
R1240		1-249-438-11	CARBON	56K	5%	1/4W
R1251		1-249-417-11	CARBON	1K	5%	1/4W
R1252		1-249-438-11	CARBON	56K	5%	1/4W
R1253		1-249-414-11	CARBON	560	5%	1/4W
R1254		1-249-438-11	CARBON	56K	5%	1/4W
R1255		1-249-425-11	CARBON	4.7K	5%	1/4W
R1256		1-249-425-11	CARBON	4.7K	5%	1/4W
R1257		1-249-425-11	CARBON	4.7K	5%	1/4W
R1258		1-249-425-11	CARBON	4.7K	5%	1/4W
R1259	⚠	1-212-881-11	FUSIBLE	100	5%	1/4W F
R1260	⚠	1-217-151-00	RES, METAL PLATE 0.22			
R1261		1-249-417-11	CARBON	1K	5%	1/4W
R1262		1-249-431-11	CARBON	15K	5%	1/4W
R1263		1-249-441-11	CARBON	100K	5%	1/4W
R1268		1-249-397-11	CARBON	22	5%	1/4W
R1269		1-249-397-11	CARBON	22	5%	1/4W
R1270		1-249-397-11	CARBON	22	5%	1/4W
R1271		1-249-397-11	CARBON	22	5%	1/4W
R1272		1-249-416-11	CARBON	820	5%	1/4W
R1273		1-249-416-11	CARBON	820	5%	1/4W
R1274		1-249-385-11	CARBON	2.2	5%	1/6W (G, IT)
R1275		1-249-385-11	CARBON	2.2	5%	1/6W (G, IT)
R1290		1-249-437-11	CARBON	47K	5%	1/4W
R1301		1-249-429-11	CARBON	10K	5%	1/4W
R1302		1-249-429-11	CARBON	10K	5%	1/4W
R1303		1-249-421-11	CARBON	2.2K	5%	1/4W

Ref. No.		Part No.	Description	Remark
			< VARIABLE RESISTOR >	
RV301		1-238-601-11	RES, ADJ, CARBON, 22K	
RV302		1-238-601-11	RES, ADJ, CARBON, 22K	
			< RELAY >	
RY1201		1-515-533-11	RELAY	
			< TRANSFORMER >	
T301		1-404-807-11	TRANSFORMER, DISCRIMINATOR	
T302		1-235-126-00	ENCAPSULATED COMPONENT (G, IT)	
			< TERMINAL >	
TM301	*	1-537-288-11	TERMINAL BOARD (PAL) (ANTENNA)	
TM1201	*	1-537-326-11	TERMINAL BOARD (SPEAKER) (AEP, UK)	
TM1201	*	1-537-327-11	TERMINAL BOARD (SPEAKER) (G, IT)	
			< TEST PIN >	
TP1	*	1-560-060-00	PIN, CONNECTOR 2P	
			< CRYSTAL >	
XT501		1-577-126-11	VIBRATOR, CRYSTAL	

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* 1-638-019-11 MD-A BOARD
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Ref. No.		Part No.	Description			Remark
			< CAPACITOR >			
C11		1-162-289-31	CERAMIC	390PF	10%	50V
C12		1-136-157-00	FILM	0.022uF	5%	50V
C13		1-124-282-00	ELECT	22uF	20%	25V
C21		1-162-289-31	CERAMIC	390PF	10%	50V
C22		1-136-157-00	FILM	0.022uF	5%	50V
C23		1-124-282-00	ELECT	22uF	20%	25V
C31		1-124-443-00	ELECT	100uF	20%	10V
C32		1-124-443-00	ELECT	100uF	20%	10V
C71		1-124-261-00	ELECT	10uF	20%	50V
C72		1-124-261-00	ELECT	10uF	20%	50V
			< CONNECTOR >			
CN71	*	1-580-782-11	SOCKET, CONNECTOR			
CNP32	*	1-580-772-11	PIN, CONNECTOR (PC BOARD) 4P			
CNP72	*	1-580-772-11	PIN, CONNECTOR (PC BOARD) 4P			
			< IC >			
IC31		8-759-111-44	IC uPC4570C-1			

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
		< TRANSISTOR >	
Q71	8-729-119-76	TRANSISTOR 2SA1175-HFE	
		< RESISTOR >	
R11	1-247-881-00	CARBON 120K 5% 1/4W	
R12	1-249-405-11	CARBON 100 5% 1/4W	
R13	1-247-882-11	CARBON 130K 5% 1/4W	
R14	1-249-426-11	CARBON 5.6K 5% 1/4W	
R21	1-247-881-00	CARBON 120K 5% 1/4W	
R22	1-249-405-11	CARBON 100 5% 1/4W	
R23	1-247-882-11	CARBON 130K 5% 1/4W	
R24	1-249-426-11	CARBON 5.6K 5% 1/4W	
R31	1-249-409-11	CARBON 220 5% 1/4W	
R32	1-249-409-11	CARBON 220 5% 1/4W	
R71	1-247-864-11	CARBON 24K 5% 1/4W	
R72	1-249-433-11	CARBON 22K 5% 1/4W	
R73	1-249-437-11	CARBON 47K 5% 1/4W	
R74	1-249-437-11	CARBON 47K 5% 1/4W	
		< VARIABLE RESISTOR >	
RV11	1-238-012-11	RES, ADJ, CARBON 1K	
RV21	1-238-012-11	RES, ADJ, CARBON 1K	
RV71	1-238-016-11	RES, ADJ, CARBON 10K	
RV72	1-238-016-11	RES, ADJ, CARBON 10K	

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Ref. No.	Part No.	Description	Remark
	* 1-638-020-11	LEAF SW BOARD (DECK A) *********************	
	3-343-419-01	HOLDER (S SENSER A)	
		< CONNECTOR >	
CNP81	* 1-568-850-11	SOCKET, CONNECTOR 7P	
		< IC >	
IC81	8-719-710-03	IC PHOTO REFLECTOR NJL5165K-B	
		< RESISTOR >	
R84	1-249-417-11	CARBON 1K 5% 1/4W	
R85	1-249-408-11	CARBON 180 5% 1/4W	
		< SWITCH >	
S81	1-571-958-11	SWITCH, PUSH (1 KEY) (STOP)	
S82	1-571-281-21	SWITCH, LEAF (70u)	
S86	1-571-281-21	SWITCH, LEAF (HALF)	

Ref. No.	Part No.	Description	Remark
	* A-2006-446-A	MD-B BOARD, COMPLETE *******************	
		< CAPACITOR >	
C11	1-162-289-31	CERAMIC 390PF 10%	50V
C12	1-136-157-00	FILM 0.022uF 5%	50V
C13	1-124-282-00	ELECT 22uF 20%	25V
C14	1-136-273-91	FILM 75PF 5%	630V
C15	1-162-288-31	CERAMIC 330PF 10%	50V
C17	1-162-209-31	CERAMIC 27PF 5%	50V
C21	1-162-289-31	CERAMIC 390PF 10%	50V
C22	1-136-157-00	FILM 0.022uF 5%	50V
C23	1-124-282-00	ELECT 22uF 20%	25V
C24	1-136-273-91	FILM 75PF 5%	630V
C25	1-162-288-31	CERAMIC 330PF 10%	50V
C27	1-162-209-31	CERAMIC 27PF 5%	50V
C31	1-124-589-11	ELECT 47uF 20%	16V
C32	1-124-589-11	ELECT 47uF 20%	16V
C33	1-124-119-00	ELECT 330uF 20%	16V
C51	1-130-729-00	FILM 0.0027uF 5%	100V
C52	1-130-729-00	FILM 0.0027uF 5%	100V
C53	1-130-339-00	FILM 0.0056uF 5%	100V
C54	1-136-562-11	FILM 0.0082uF 5%	630V
C55	1-161-494-00	CERAMIC 0.022uF	25V
C56	1-124-261-00	ELECT 10uF 20%	50V
C57	1-126-301-11	ELECT 1uF 20%	50V
C58	1-162-282-31	CERAMIC 100PF 10%	50V
C71	1-124-261-00	ELECT 10uF 20%	50V
C72	1-124-261-00	ELECT 10uF 20%	50V
		< CONNECTOR >	
CN71	* 1-580-782-11	SOCKET, CONNECTOR	
CN72	* 1-580-782-11	SOCKET, CONNECTOR	
CNP32	* 1-580-781-11	PIN, CONNECTOR (PC BOARD) 7P	
CNP72	* 1-580-772-11	PIN, CONNECTOR (PC BOARD) 4P	
		< DIODE >	
D31	8-719-987-63	DIODE 11ES2	
		< IC >	
IC31	8-759-111-44	IC uPC4570C-1	
		< COIL >	
L11	1-410-780-11	INDUCTOR 27mH	
L21	1-410-780-11	INDUCTOR 27mH	

MD-B | LEAF SW (DECK B) | PANEL | H.P | VOL

Ref. No.	Part No.	Description	Remark
		< TRANSISTOR >	
Q51	8-729-194-57	TRANSISTOR 2SC945-P	
Q52	8-729-194-57	TRANSISTOR 2SC945-P	
Q53	8-729-111-29	TRANSISTOR 2SD1616A-K	
Q71	8-729-119-76	TRANSISTOR 2SA1175-HFE	
		< RESISTOR >	
R11	1-247-881-00	CARBON 120K 5% 1/4W	
R12	1-249-405-11	CARBON 100 5% 1/4W	
R13	1-247-882-11	CARBON 130K 5% 1/4W	
R14	1-249-426-11	CARBON 5.6K 5% 1/4W	
R15	1-249-430-11	CARBON 12K 5% 1/4W	
R21	1-247-881-00	CARBON 120K 5% 1/4W	
R22	1-249-405-11	CARBON 100 5% 1/4W	
R23	1-247-882-11	CARBON 130K 5% 1/4W	
R24	1-249-426-11	CARBON 5.6K 5% 1/4W	
R25	1-249-430-11	CARBON 12K 5% 1/4W	
R31	1-249-409-11	CARBON 220 5% 1/4W	
R32	1-249-409-11	CARBON 220 5% 1/4W	
R51	1-249-435-11	CARBON 33K 5% 1/4W	
R52	1-249-435-11	CARBON 33K 5% 1/4W	
R53	1-249-429-11	CARBON 10K 5% 1/4W	
R54	1-212-849-00	FUSIBLE 4.7 5% 1/4W	F
R71	1-247-864-11	CARBON 24K 5% 1/4W	
R72	1-249-433-11	CARBON 22K 5% 1/4W	
R73	1-249-437-11	CARBON 47K 5% 1/4W	
R74	1-249-437-11	CARBON 47K 5% 1/4W	
		< VARIABLE RESISTOR >	
RV11	1-238-012-11	RES, ADJ, CARBON 1K	
RV12	1-230-500-11	RES, ADJ, CARBON 220K	
RV21	1-238-012-11	RES, ADJ, CARBON 1K	
RV22	1-230-500-11	RES, ADJ, CARBON 220K	
RV71	1-238-016-11	RES, ADJ, CARBON 10K	
RV72	1-238-016-11	RES, ADJ, CARBON 10K	
		< RELAY >	
RY31	1-515-614-11	RELAY	
		< TRANSFORMER >	
T51	1-433-337-11	TRANSFORMER, BIAS OSCILLATION	

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Ref. No.	Part No.	Description	Remark
	* 1-638-020-11	LEAF SW BOARD (DECK B) **********************	
	3-343-419-01	HOLDER (S SENSER A)	

Ref. No.	Part No.	Description	Remark
		< CONNECTOR >	
CNP81	* 1-568-850-11	SOCKET, CONNECTOR 7P	
		< IC >	
IC81	8-719-710-03	PHOTO REFLECTOR NJL5165K-B	
		< RESISTOR >	
R81	1-249-414-11	CARBON 560 5% 1/4W	
R82	1-247-818-11	CARBON 300 5% 1/4W	
R83	1-247-834-11	CARBON 1.3K 5% 1/4W	
R84	1-249-417-11	CARBON 1K 5% 1/4W	
R85	1-249-408-11	CARBON 180 5% 1/4W	
		< SWITCH >	
S81	1-571-958-11	SWITCH, PUSH (1 KEY)	
S82	1-571-281-21	SWITCH, LEAF	
S84	1-571-281-21	SWITCH, LEAF	
S85	1-571-281-21	SWITCH, LEAF	
S86	1-571-281-21	SWITCH, LEAF	

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Ref. No.	Part No.	Description	Remark
	* A-4341-509-A	PANEL BOARD, COMPLETE (AEP, UK)	
	* A-4345-004-A	PANEL BOARD, COMPLETE (G)	
	* A-4345-007-A	PANEL BOARD, COMPLETE (IT) *****************************	
	* 1-638-303-11	HP BOARD ********	
	* 1-638-304-11	VOL BOARD *********	
	* 4-921-941-01	CUSHION (FL)	
	* 4-930-781-11	HOLDER (VO), LED	
	* 4-942-301-01	HOLDER, FL TUBE	
	* 4-943-499-01	HOLDER (A) (EQ), LED	
	* 4-943-500-01	HOLDER (B) (EQ), LED	
	* 4-943-501-01	HOLDER (4 GANG), LED	
		< CAPACITOR >	
C603	1-136-169-00	FILM 0.22uF 5% 50V	
C604	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C605	1-125-486-11	DUBLE LAYERS 0.22F 5.5V	
C606	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C607	1-124-907-11	ELECT 10uF 20% 50V	
C608	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C609	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C610	1-102-961-00	CERAMIC 27PF 5% 50V	(AEP, UK, G)
C610	1-102-960-00	CERAMIC 24PF 5% 50V	(IT)

Ref. No.	Part No.	Description				Remark
C611	1-162-206-31	CERAMIC	20PF	5%	50V	(AEP, UK, G)
C611	1-162-961-31	CERAMIC	27PF	5%	50V	(IT)
C1141	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C1217	1-162-286-31	CERAMIC	220PF	10%	50V	(G, IT)
C1234	1-161-494-00	CERAMIC	0.022uF		25V	(G, IT)
C1267	1-162-286-31	CERAMIC	220PF	10%	50V	(G, IT)
C1401	1-136-165-00	FILM	0.1uF	5%	50V	
C1402	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C1403	1-126-101-11	ELECT	100uF	20%	16V	
C1404	1-161-494-00	CERAMIC	0.022uF		25V	
C1405	1-125-486-11	DUBLE LAYERS	0.22F		5.5V	
C1406	1-124-907-11	ELECT	10uF	20%	50V	
C1407	1-124-907-11	ELECT	10uF	20%	50V	
C1408	1-161-374-11	CERAMIC	0.0015uF	20%	50V	
C1409	1-161-494-00	CERAMIC	0.022uF		25V	
C1410	1-126-101-11	ELECT	100uF	20%	16V	
C1411	1-161-494-00	CERAMIC	0.022uF		25V	
C1412	1-124-907-11	ELECT	10uF	20%	50V	
C1413	1-161-494-00	CERAMIC	0.022uF		25V	
C1414	1-124-907-11	ELECT	10uF	20%	50V	
C1415	1-162-294-31	CERAMIC	0.001uF	10%	50V	
		< FILTER >				
CF1401	1-567-775-11	VIBRATOR, CERAMIC				
		< CONNECTOR >				
CN601 *	1-568-830-11	SOCKET, CONNECTOR 11P				
CN1202	1-569-113-11	JACK, LARGE TYPE (HEADPHONES)				
CN1401 *	1-568-836-11	SOCKET, CONNECTOR 17P				
CN1402	1-568-802-11	SOCKET, CONNECTOR 19P				
		< COMPOSITION CIRCUIT BLOCK >				
CP1401	1-239-054-11	COMPOSITION CIRCUIT BLOCK				
CP1402	1-239-054-11	COMPOSITION CIRCUIT BLOCK				
		< DIODE >				
D601	8-719-987-63	DIODE 1N4148M				
D602	8-719-010-26	DIODE UZ-3.9BSB				
D603	8-719-987-63	DIODE 1N4148M				
D604	8-719-987-63	DIODE 1N4148M				
D611	8-719-987-63	DIODE 1N4148M				
D612	8-719-987-63	DIODE 1N4148M				
D613	8-719-987-63	DIODE 1N4148M				
D614	8-719-987-63	DIODE 1N4148M				
D615	8-719-987-63	DIODE 1N4148M				
D616	8-719-987-63	DIODE 1N4148M				
D617	8-719-987-63	DIODE 1N4148M				
D621	8-719-987-63	DIODE 1N4148M				(IT)
D625	8-719-987-63	DIODE 1N4148M				
D626	8-719-987-63	DIODE 1N4148M				
D627	8-719-987-63	DIODE 1N4148M				
D631	8-719-987-63	DIODE 1N4148M				
D1401	8-719-987-63	DIODE 1N4148M				
D1402	8-719-987-63	DIODE 1N4148M				
D1403	8-719-987-63	DIODE 1N4148M				
D1404	8-719-987-63	DIODE 1N4148M				
D1405	8-719-987-63	DIODE 1N4148M				
D1406	8-719-987-63	DIODE 1N4148M				
D1407	8-719-987-63	DIODE 1N4148M				
D1408	8-719-987-63	DIODE 1N4148M				
D1409	8-719-987-63	DIODE 1N4148M				
D1410	8-719-987-63	DIODE 1N4148M				
D1411	8-719-987-63	DIODE 1N4148M				
D1412	8-719-933-36	DIODE HZS6B1L				
D1413	8-719-933-36	DIODE HZS6B1L				
D1414	8-719-987-63	DIODE 1N4148M				
D1415	8-719-987-63	DIODE 1N4148M				
D1416	8-719-987-63	DIODE 1N4148M				
D1417	8-719-987-63	DIODE 1N4148M				
D1418	8-719-987-63	DIODE 1N4148M				
D1419	8-719-987-63	DIODE 1N4148M				
D1420	8-719-987-63	DIODE 1N4148M				
D1421	8-719-301-38	DIODE SEL2210S-C				
D1422	8-719-301-38	DIODE SEL2210S-C				
D1423	8-719-301-38	DIODE SEL2210S-C				
D1424	8-719-301-38	DIODE SEL2210S-C				
D1425	8-719-301-38	DIODE SEL2210S-C				
D1426	8-719-301-38	DIODE SEL2210S-C				
D1427	8-719-301-38	DIODE SEL2210S-C				
D1428	8-719-301-38	DIODE SEL2210S-C				
D1429	8-719-301-38	DIODE SEL2210S-C				
D1430	8-719-301-38	DIODE SEL2210S-C				
D1431	8-719-301-38	DIODE SEL2210S-C				
D1432	8-719-301-38	DIODE SEL2210S-C				
D1433	8-719-301-38	DIODE SEL2210S-C				
D1434	8-719-301-38	DIODE SEL2210S-C				
D1435	8-719-301-38	DIODE SEL2210S-C				
D1436	8-719-301-38	DIODE SEL2210S-C				
D1437	8-719-301-38	DIODE SEL2210S-C				
D1438	8-719-301-38	DIODE SEL2210S-C				
D1439	8-719-301-38	DIODE SEL2210S-C				
D1440	8-719-301-38	DIODE SEL2210S-C				
D1441	8-719-301-38	DIODE SEL2210S-C				
D1442	8-719-301-38	DIODE SEL2210S-C				
D1443	8-719-301-38	DIODE SEL2210S-C				

PANEL H.P VOL

Ref. No.	Part No.	Description	Remark
		< FLUORESCENT INDICATOR >	
FL601	1-519-595-21	INDICATOR TUBE, FLUORESCENT	
FL1401	1-519-648-11	INDICATOR TUBE, FLUORESCENT	
		< IC >	
IC601	8-759-154-08	IC uPD75212ACW-276	
IC602	8-749-920-83	IC GP1U52XB	
IC1106	8-759-820-62	IC LB1639	
IC1401	8-759-153-68	IC uPD75106GF-761-3BE	
IC1402	8-759-820-59	IC LC7565	
IC1403	8-759-991-11	IC XR1091DCP	
IC1404	8-759-635-63	IC M51943BSL	
		< COIL >	
L601	1-410-521-11	INDUCTOR 100uH	
		< TRANSISTOR >	
Q601	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q602	8-729-900-80	TRANSISTOR DTC114ES	
Q603	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1102	8-729-141-26	TRANSISTOR 2SC3622A-LK	
Q1152	8-729-141-26	TRANSISTOR 2SC3622A-LK	
Q1401	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1402	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1403	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1404	8-729-900-61	TRANSISTOR DTA114ES	
Q1405	8-729-900-80	TRANSISTOR DTC114ES	
Q1406	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1407	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q1408	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1409	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1410	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1411	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1412	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1413	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1414	8-729-119-78	TRANSISTOR 2SC2785-HFE	
		< RESISTOR >	
R601	1-249-429-11	CARBON 10K 5% 1/4W	
R602	1-249-429-11	CARBON 10K 5% 1/4W	
R603	1-249-423-11	CARBON 3.3K 5% 1/4W	
R604	1-249-437-11	CARBON 47K 5% 1/4W	
R605	1-249-433-11	CARBON 22K 5% 1/4W	
R606	1-249-433-11	CARBON 22K 5% 1/4W	
R607	1-249-439-11	CARBON 68K 5% 1/4W	
R608	1-249-417-11	CARBON 1K 5% 1/4W	
R609	1-249-405-11	CARBON 100 5% 1/4W	
R610	1-249-429-11	CARBON 10K 5% 1/4W	

Ref. No.	Part No.	Description	Remark
R611	1-249-421-11	CARBON 2.2K 5% 1/4W	
R612	1-249-417-11	CARBON 1K 5% 1/4W	
R613	1-249-437-11	CARBON 47K 5% 1/4W	(AEP, UK)
R614	1-249-437-11	CARBON 47K 5% 1/4W	(AEP, UK)
R615	1-249-437-11	CARBON 47K 5% 1/4W	(AEP, UK)
R617	1-249-425-11	CARBON 4.7K 5% 1/4W	
R618	1-249-429-11	CARBON 10K 5% 1/4W	
R1122	1-249-421-11	CARBON 2.2K 5% 1/4W	
R1123	1-249-425-11	CARBON 4.7K 5% 1/4W	
R1124	1-249-433-11	CARBON 22K 5% 1/4W	
R1125	1-249-433-11	CARBON 22K 5% 1/4W	
R1126	1-249-433-11	CARBON 22K 5% 1/4W	
R1172	1-249-421-11	CARBON 2.2K 5% 1/4W	
R1173	1-249-425-11	CARBON 4.7K 5% 1/4W	
R1401	1-249-417-11	CARBON 1K 5% 1/4W	
R1402	1-249-435-11	CARBON 33K 5% 1/4W	
R1403	1-249-429-11	CARBON 10K 5% 1/4W	
R1404	1-249-437-11	CARBON 47K 5% 1/4W	
R1405	1-249-405-11	CARBON 100 5% 1/4W	
R1406	1-249-425-11	CARBON 4.7K 5% 1/4W	
R1407	1-249-437-11	CARBON 47K 5% 1/4W	
R1408	1-249-437-11	CARBON 47K 5% 1/4W	
R1409	1-249-437-11	CARBON 47K 5% 1/4W	
R1410	1-249-437-11	CARBON 47K 5% 1/4W	
R1413	1-249-417-11	CARBON 1K 5% 1/4W	
R1414	1-249-417-11	CARBON 1K 5% 1/4W	
R1422	1-249-417-11	CARBON 1K 5% 1/4W	
R1423	1-249-437-11	CARBON 47K 5% 1/4W	
R1424	1-249-425-11	CARBON 4.7K 5% 1/4W	
R1425	1-249-437-11	CARBON 47K 5% 1/4W	
R1426	1-249-437-11	CARBON 47K 5% 1/4W	
R1427	1-249-437-11	CARBON 47K 5% 1/4W	
R1428	1-249-437-11	CARBON 47K 5% 1/4W	
R1429	1-247-891-00	CARBON 330K 5% 1/4W	
R1430	1-247-891-00	CARBON 330K 5% 1/4W	
R1431	1-249-432-11	CARBON 18K 5% 1/4W	
R1432	1-249-427-11	CARBON 6.8K 5% 1/4W	
R1433	1-249-427-11	CARBON 6.8K 5% 1/4W	
R1434	1-249-435-11	CARBON 33K 5% 1/4W	
R1435	1-249-435-11	CARBON 33K 5% 1/4W	
R1436	1-249-419-11	CARBON 1.5K 5% 1/4W	
R1437	1-249-405-11	CARBON 100 5% 1/4W	
R1438	1-249-405-11	CARBON 100 5% 1/4W	
R1439	1-249-425-11	CARBON 4.7K 5% 1/4W	
R1440	1-249-404-00	CARBON 82 5% 1/4W	
R1441	1-249-425-11	CARBON 4.7K 5% 1/4W	
R1442	1-249-404-00	CARBON 82 5% 1/4W	
R1443	1-249-425-11	CARBON 4.7K 5% 1/4W	

Ref. No.	Part No.	Description			Remark
R1444	1-249-404-00	CARBON	82	5%	1/4W
R1445	1-249-425-11	CARBON	4.7K	5%	1/4W
R1446	1-249-404-00	CARBON	82	5%	1/4W
R1447	1-249-425-11	CARBON	4.7K	5%	1/4W
R1448	1-249-404-00	CARBON	82	5%	1/4W
R1449	1-249-425-11	CARBON	4.7K	5%	1/4W
R1450	1-249-404-00	CARBON	82	5%	1/4W
R1451	1-249-425-11	CARBON	4.7K	5%	1/4W
R1452	1-249-404-00	CARBON	82	5%	1/4W
R1453	1-249-425-11	CARBON	4.7K	5%	1/4W
R1454	1-249-437-11	CARBON	47K	5%	1/4W
R1455	1-249-414-11	CARBON	560	5%	1/4W
R1456	1-249-414-11	CARBON	560	5%	1/4W
R1457	1-249-414-11	CARBON	560	5%	1/4W
R1458	1-249-414-11	CARBON	560	5%	1/4W
R1459	1-249-414-11	CARBON	560	5%	1/4W
R1460	1-249-414-11	CARBON	560	5%	1/4W
R1461	1-249-414-11	CARBON	560	5%	1/4W
R1462	1-249-414-11	CARBON	560	5%	1/4W
R1463	1-249-411-11	CARBON	330	5%	1/4W
R1464	1-249-410-11	CARBON	270	5%	1/4W
R1465	1-249-410-11	CARBON	270	5%	1/4W
R1466	1-249-410-11	CARBON	270	5%	1/4W
R1467	1-249-410-11	CARBON	270	5%	1/4W
R1468	1-249-410-11	CARBON	270	5%	1/4W
R1469	1-249-411-11	CARBON	330	5%	1/4W
R1470	1-249-413-11	CARBON	470	5%	1/4W
R1472	1-249-433-11	CARBON	22K	5%	1/4W
R1480	1-249-417-11	CARBON	1K	5%	1/4W

< VARIABLE RESISTOR >

RV1101	1-241-352-11	RES, VAR, CARBON 100K/100K (BALANCE)
RV1102	1-241-350-11	RES, VAR, CARBON 100K/100K (VOLUME)

< SWITCH >

Ref. No.	Part No.	Description	Remark
S601	1-554-303-21	SWITCH, TACTILE (1)	
S602	1-554-303-21	SWITCH, TACTILE (2)	
S603	1-554-303-21	SWITCH, TACTILE (3)	
S604	1-554-303-21	SWITCH, TACTILE (4)	
S605	1-554-303-21	SWITCH, TACTILE (5)	
S606	1-554-303-21	SWITCH, TACTILE (6)	
S607	1-554-303-21	SWITCH, TACTILE (7)	
S608	1-554-303-21	SWITCH, TACTILE (8)	
S609	1-554-303-21	SWITCH, TACTILE (9)	
S610	1-554-303-21	SWITCH, TACTILE (0)	
S614	1-554-303-21	SWITCH, TACTILE (UP)	
S615	1-554-303-21	SWITCH, TACTILE (DOWN)	
S616	1-554-303-21	SWITCH, TACTILE (SHIFT)	
S617	1-554-303-21	SWITCH, TACTILE (BAND SELECT)	
S618	1-554-303-21	SWITCH, TACTILE (ST/MUTE)	
S619	1-554-303-21	SWITCH, TACTILE (MEMORY)	
S621	1-554-303-21	SWITCH, TACTILE (ONCE)	
S622	1-554-303-21	SWITCH, TACTILE (DAILY)	
S623	1-554-303-21	SWITCH, TACTILE (NEXT)	
S626	1-554-303-21	SWITCH, TACTILE (CLOCK)	
S627	1-554-303-21	SWITCH, TACTILE (TIMER MODE)	
S628	1-554-303-21	SWITCH, TACTILE (CONTROL)	
S629	1-554-303-21	SWITCH, TACTILE (CLEAR)	
S630	1-554-303-21	SWITCH, TACTILE (BACK)	
S631	1-554-303-21	SWITCH, TACTILE (POWER)	
S632	1-554-303-21	SWITCH, TACTILE (SLEEP)	
S633	1-554-303-21	SWITCH, TACTILE (FREQ/TIME)	
S1401	1-554-303-21	SWITCH, TACTILE (PHONO)	
S1402	1-554-303-21	SWITCH, TACTILE (TUNER)	
S1403	1-554-303-21	SWITCH, TACTILE (CD)	
S1404	1-554-303-21	SWITCH, TACTILE (TAPE)	
S1405	1-554-303-21	SWITCH, TACTILE (VIDEO)	
S1406	1-554-303-21	SWITCH, TACTILE (EQ.REC)	
S1407	1-554-303-21	SWITCH, TACTILE (▲)	
S1408	1-554-303-21	SWITCH, TACTILE (▼)	
S1409	1-554-303-21	SWITCH, TACTILE (1)	
S1410	1-554-303-21	SWITCH, TACTILE (2)	
S1411	1-554-303-21	SWITCH, TACTILE (SURROUND)	
S1412	1-554-303-21	SWITCH, TACTILE (DBFB)	
S1413	1-554-303-21	SWITCH, TACTILE (▶)	
S1414	1-554-303-21	SWITCH, TACTILE (◀)	
S1415	1-554-303-21	SWITCH, TACTILE (5)	
S1416	1-554-303-21	SWITCH, TACTILE (4)	
S1417	1-554-303-21	SWITCH, TACTILE (3)	
S1418	1-554-303-21	SWITCH, TACTILE (DISPLAY)	
S1419	1-554-303-21	SWITCH, TACTILE (EFFECT)	
S1420	1-554-303-21	SWITCH, TACTILE (CLEAR)	
S1421	1-554-303-21	SWITCH, TACTILE (MEMORY)	
S1422	1-554-303-21	SWITCH, TACTILE (PERSONAL)	

< CRYSTAL >

X601	1-577-621-11	VIBRATOR, CRYSTAL

POWER FUSE CONTROL SW DISPLAY

Ref. No.	Part No.	Description				Remark
	* 1-638-298-11	POWER BOARD				
		***********				
	* 1-638-299-11	FUSE BOARD				
		**********				
	1-533-217-31	HOLDER, FUSE				
	1-535-139-00	TERMINAL (UK)				
	1-535-476-11	TERMINAL (AEP, G, IT)				
	* 1-560-595-00	TERMINAL (WITH BASE)				
	4-352-844-01	PIN, LEAD, COATING				
		< CAPACITOR >				
C1301	1-161-744-00	CERAMIC	0.01uF		400V	
C1330	1-136-165-00	FILM	0.1uF	5%	50V	
C1331	1-124-360-00	ELECT	1000uF	20%	16V	
C1332	1-124-463-00	ELECT	0.1uF	20%	50V	
C1333	1-124-907-11	ELECT	10uF	20%	50V	
C1335	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C1336	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C1337	1-124-907-11	ELECT	10uF	20%	50V	
C1338	1-124-122-11	ELECT	100uF	20%	50V	
C1339	1-124-907-11	ELECT	10uF	20%	50V	
C1340	1-124-910-11	ELECT	47uF	20%	50V	
C1345	1-124-477-11	ELECT	47uF	20%	25V	
		< DIODE >				
D1301	8-719-987-63	DIODE 1N4148M				
D1302	8-719-987-63	DIODE 1N4148M				
D1317	8-719-200-82	DIODE 11ES2				
D1318	8-719-200-82	DIODE 11ES2				
D1319	8-719-200-82	DIODE 11ES2				
D1320	8-719-200-82	DIODE 11ES2				
D1321	8-719-987-63	DIODE 1N4148M				
D1322	8-719-200-82	DIODE 11ES2				
D1323	8-719-934-21	DIODE HZS30-1L				
D1324	8-719-014-66	DIODE UZP-5.6B				
D1330	8-719-987-63	DIODE 1N4148M				
		< IC >				
IC1305	8-759-820-13	IC L78MR06				
		< TRANSISTOR >				
Q1302	8-729-111-67	TRANSISTOR 2SB1375				
Q1303	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q1304	8-729-119-78	TRANSISTOR 2SC2785-HFE				
		< RESISTOR >				
R1304	⚠ 1-212-857-00	FUSIBLE	10	5%	1/4W	F
R1305	⚠ 1-212-934-00	FUSIBLE	1	5%	1/2W	F
R1306	1-249-417-11	CARBON	1K	5%	1/4W	
R1307	1-249-429-11	CARBON	10K	5%	1/4W	
R1308	1-249-421-11	CARBON	2.2K	5%	1/4W	
R1309	1-249-425-11	CARBON	4.7K	5%	1/4W	
R1310	1-249-433-11	CARBON	22K	5%	1/4W	
R1311	1-249-433-11	CARBON	22K	5%	1/4W	
		< RELAY >				
RY1301	1-515-720-11	RELAY				
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	* 1-638-022-11	CONTROL SW BOARD				
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	* 1-638-023-11	DISPLAY BOARD				
		*************				
	* 1-568-854-11	SOCKET, CONNECTOR 11P				
	* 4-943-502-01	HOLDER (TC), LED				
		< DIODE >				
D903	8-719-301-52	DIODE SEL2810A-C				
D904	8-719-301-52	DIODE SEL2810A-C				
D905	8-719-301-38	DIODE SEL2210S-C				
D906	8-719-301-38	DIODE SEL2210S-C				
D907	8-719-301-44	DIODE SEL2410E-D				
D908	8-719-301-38	DIODE SEL2210S-C				
D909	8-719-301-44	DIODE SEL2410E-D				
D910	8-719-301-52	DIODE SEL2810A-C				
D911	8-719-301-52	DIODE SEL2810A-C				
D912	8-719-301-52	DIODE SEL2810A-C				
		< RESISTOR >				
R956	1-249-407-11	CARBON	150	5%	1/4W	
R957	1-249-409-11	CARBON	220	5%	1/4W	
R958	1-249-411-11	CARBON	330	5%	1/4W	
R959	1-249-413-11	CARBON	470	5%	1/4W	
R960	1-249-415-11	CARBON	680	5%	1/4W	
R961	1-249-417-11	CARBON	1K	5%	1/4W	
R962	1-249-420-11	CARBON	1.8K	5%	1/4W	
R963	1-249-407-11	CARBON	150	5%	1/4W	
R964	1-249-409-11	CARBON	220	5%	1/4W	
R965	1-249-411-11	CARBON	330	5%	1/4W	
R966	1-249-413-11	CARBON	470	5%	1/4W	
R967	1-249-415-11	CARBON	680	5%	1/4W	
R968	1-249-417-11	CARBON	1K	5%	1/4W	
R969	1-249-426-11	CARBON	5.6K	5%	1/4W	
R970	1-249-430-11	CARBON	12K	5%	1/4W	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description			Remark
		< SWITCH >			
S901	1-572-268-11	SWITCH, SLIDE (DIRECTION)			
S902	1-572-269-11	SWITCH, SLIDE (DOLBY NR)			
S903	1-554-303-21	SWITCH, TACTILE (■)			DECK A
S904	1-554-303-21	SWITCH, TACTILE (►)			
S905	1-554-303-21	SWITCH, TACTILE (◄)			
S906	1-554-303-21	SWITCH, TACTILE (◄◄)			DECK B
S907	1-554-303-21	SWITCH, TACTILE (►►)			
S908	1-554-303-21	SWITCH, TACTILE (●)			
S909	1-554-303-21	SWITCH, TACTILE (DUBBING HIGH SPEED)			
S910	1-554-303-21	SWITCH, TACTILE (DUBBING NORMAL SPEED)			
S911	1-554-303-21	SWITCH, TACTILE (■)			DECK B
S912	1-554-303-21	SWITCH, TACTILE (❚❚)			
S913	1-554-303-21	SWITCH, TACTILE (►)			
S914	1-554-303-21	SWITCH, TACTILE (◄)			
S915	1-554-303-21	SWITCH, TACTILE (○)			
S916	1-554-303-21	SWITCH, TACTILE (◄◄)			DECK A
S917	1-554-303-21	SWITCH, TACTILE (►►)			

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Ref. No.	Part No.	Description			Remark
	* A-4341-504-A	TC SIGNAL BOARD, COMPLETE *************************			
	* 1-568-854-11	SOCKET, CONNECTOR 11P			
	7-682-548-04	SCREW +BVTT 3X8 (S)			
		< CAPACITOR >			
C701	1-136-157-00	FILM	0.022uF	5%	50V
C704	1-162-288-31	CERAMIC	330PF	10%	50V
C705	1-131-587-11	TANTALUM	0.68uF	10%	35V
C706	1-124-907-11	ELECT	10uF	20%	50V
C707	1-124-902-00	ELECT	0.47uF	20%	50V
C708	1-124-907-11	ELECT	10uF	20%	50V
C709	1-124-925-11	ELECT	2.2uF	20%	100V
C710	1-124-907-11	ELECT	10uF	20%	50V
C751	1-136-157-00	FILM	0.022uF	5%	50V
C754	1-162-288-31	CERAMIC	330PF	10%	50V
C755	1-131-587-11	TANTALUM	0.68uF	10%	35V
C756	1-124-907-11	ELECT	10uF	20%	50V
C757	1-124-902-00	ELECT	0.47uF	20%	50V
C758	1-124-907-11	ELECT	10uF	20%	50V
C759	1-124-925-11	ELECT	2.2uF	20%	100V
C760	1-124-907-11	ELECT	10uF	20%	50V
C801	1-124-903-11	ELECT	1uF	20%	50V
C802	1-161-494-00	CERAMIC	0.022uF		25V
C803	1-124-925-11	ELECT	2.2uF	20%	100V
C804	1-124-443-00	ELECT	100uF	20%	10V

Ref. No.	Part No.	Description			Remark
C805	1-124-443-00	ELECT	100uF	20%	10V
C806	1-124-907-11	ELECT	10uF	20%	50V
C807	1-124-443-00	ELECT	100uF	20%	10V
C808	1-124-443-00	ELECT	100uF	20%	10V
C901	1-124-907-11	ELECT	10uF	20%	50V
C902	1-136-165-00	FILM	0.1uF	5%	50V
C903	1-136-165-00	FILM	0.1uF	5%	50V
C904	1-124-903-11	ELECT	1uF	20%	50V
C905	1-162-288-31	CERAMIC	330PF	10%	50V
C906	1-162-288-31	CERAMIC	330PF	10%	50V
		< CONNECTOR >			
CN801	* 1-568-449-11	HOUSING, CONNECTOR (PC BOARD) 3P			
CN901	* 1-568-850-11	SOCKET, CONNECTOR 7P			
CN902	* 1-568-850-11	SOCKET, CONNECTOR 7P			
CN904	* 1-568-953-11	PIN, CONNECTOR 4P			
CN905	* 1-568-830-11	SOCKET, CONNECTOR 11P			
CN906	* 1-564-508-11	PLUG, CONNECTOR 5P			
CN907	1-580-783-11	PLUG, CONNECTOR			
CN908	1-580-783-11	PLUG, CONNECTOR			
CN909	1-580-783-11	PLUG, CONNECTOR			
CNP901	* 1-568-449-11	HOUSING, CONNECTOR (PC BOARD) 3P			
		< DIODE >			
D801	8-719-987-63	DIODE 1N4148M			
D802	8-719-933-50	DIODE HZS7C2L			
D803	8-719-933-50	DIODE HZS7C2L			
D804	8-719-001-18	DIODE UZL-9M3			
D901	8-719-987-63	DIODE 1N4148M			
D902	8-719-987-63	DIODE 1N4148M			
D903	8-719-987-63	DIODE 1N4148M			
		< IC >			
IC801	8-759-634-51	IC M5218AP			
IC803	8-759-140-53	IC MC14053BCP			
IC805	8-752-031-67	IC CXA1100P			
IC806	8-752-038-02	IC CXA1198AP			
IC807	8-759-000-48	IC MC14052BCP			
IC901	8-759-207-05	IC TA7272P			
IC902	8-759-636-69	IC M50964-251FP			
		< TRANSISTOR >			
Q701	8-729-900-74	TRANSISTOR DTC143TS			
Q702	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q703	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q751	8-729-900-74	TRANSISTOR DTC143TS			
Q752	8-729-119-78	TRANSISTOR 2SC2785-HFE			

TC SIGNAL

Ref. No.	Part No.	Description			Remark
Q753	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q801	8-729-900-61	TRANSISTOR DTA114ES			
Q802	8-729-900-61	TRANSISTOR DTA114ES			
Q803	8-729-900-61	TRANSISTOR DTA114ES			
Q901	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q902	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q903	8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q904	8-729-900-61	TRANSISTOR DTA114ES			
Q905	8-729-900-80	TRANSISTOR DTC114ES			
Q906	8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q907	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q908	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q910	8-729-900-61	TRANSISTOR DTA114ES			
Q911	8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q912	8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q913	8-729-900-61	TRANSISTOR DTA114ES			
Q914	8-729-900-89	TRANSISTOR DTC144ES			
Q915	8-729-116-57	TRANSISTOR 2SB1068-K			
Q916	8-729-116-57	TRANSISTOR 2SB1068-K			
		< RESISTOR >			
R701	1-249-421-11	CARBON	2.2K	5%	1/4W
R702	1-249-423-11	CARBON	3.3K	5%	1/4W
R703	1-247-887-00	CARBON	220K	5%	1/4W
R708	1-249-434-11	CARBON	27K	5%	1/4W
R709	1-249-421-11	CARBON	2.2K	5%	1/4W
R710	1-249-425-11	CARBON	4.7K	5%	1/4W
R711	1-249-426-11	CARBON	5.6K	5%	1/4W
R712	1-249-425-11	CARBON	4.7K	5%	1/4W
R713	1-249-421-11	CARBON	2.2K	5%	1/4W
R714	1-249-421-11	CARBON	2.2K	5%	1/4W
R715	1-249-421-11	CARBON	2.2K	5%	1/4W
R716	1-249-425-11	CARBON	4.7K	5%	1/4W
R717	1-249-421-11	CARBON	2.2K	5%	1/4W
R751	1-249-421-11	CARBON	2.2K	5%	1/4W
R752	1-249-423-11	CARBON	3.3K	5%	1/4W
R753	1-247-887-00	CARBON	220K	5%	1/4W
R758	1-249-434-11	CARBON	27K	5%	1/4W
R759	1-249-421-11	CARBON	2.2K	5%	1/4W
R760	1-249-425-11	CARBON	4.7K	5%	1/4W
R761	1-249-426-11	CARBON	5.6K	5%	1/4W
R762	1-249-425-11	CARBON	4.7K	5%	1/4W
R763	1-249-421-11	CARBON	2.2K	5%	1/4W
R764	1-249-421-11	CARBON	2.2K	5%	1/4W
R765	1-249-421-11	CARBON	2.2K	5%	1/4W
R766	1-249-425-11	CARBON	4.7K	5%	1/4W

Ref. No.	Part No.	Description			Remark
R767	1-249-421-11	CARBON	2.2K	5%	1/4W
R801	1-249-441-11	CARBON	100K	5%	1/4W
R802	1-249-417-11	CARBON	1K	5%	1/4W
R803	1-249-441-11	CARBON	100K	5%	1/4W
R804	1-249-427-11	CARBON	6.8K	5%	1/4W
R805	1-249-413-11	CARBON	470	5%	1/4W
R806	1-249-429-11	CARBON	10K	5%	1/4W
R807	1-249-413-11	CARBON	470	5%	1/4W
R808	1-247-870-11	CARBON	43K	5%	1/4W
R809	1-249-431-11	CARBON	15K	5%	1/4W
R810	1-215-460-00	METAL	43K	1%	1/6W
R811	1-249-437-11	CARBON	47K	5%	1/4W
R812	1-249-437-11	CARBON	47K	5%	1/4W
R813	1-247-887-00	CARBON	220K	5%	1/4W
R814	1-247-864-11	CARBON	24K	5%	1/4W
R815	1-249-405-11	CARBON	100	5%	1/4W
R816	1-249-405-11	CARBON	100	5%	1/4W
R817	1-249-436-11	CARBON	39K	5%	1/4W
R818	1-249-435-11	CARBON	33K	5%	1/4W
R819	1-249-432-11	CARBON	18K	5%	1/4W
R820	1-247-878-00	CARBON	91K	5%	1/4W
R821	1-247-881-00	CARBON	120K	5%	1/4W
R822	1-249-437-11	CARBON	47K	5%	1/4W
R823	1-247-862-11	CARBON	20K	5%	1/4W
R824	1-247-868-11	CARBON	36K	5%	1/4W
R825	1-249-433-11	CARBON	22K	5%	1/4W
R826	1-247-876-11	CARBON	75K	5%	1/4W
R827	1-247-868-11	CARBON	36K	5%	1/4W
R828	1-247-878-00	CARBON	91K	5%	1/4W
R829	1-247-874-11	CARBON	[illegible]	5%	1/4W
R830	1-249-437-11	CARBON	47K	5%	1/4W
R831	1-249-433-11	CARBON	22K	5%	1/4W
R832	1-247-878-00	CARBON	91K	5%	1/4W
R833	1-247-881-00	CARBON	120K	5%	1/4W
R834	1-247-876-11	CARBON	75K	5%	1/4W
R835	1-247-868-11	CARBON	36K	5%	1/4W
R836	1-249-438-11	CARBON	56K	5%	1/4W
R837	1-249-432-11	CARBON	18K	5%	1/4W
R838	1-249-434-11	CARBON	27K	5%	1/4W
R839	1-249-440-11	CARBON	82K	5%	1/4W
R840	1-249-440-11	CARBON	82K	5%	1/4W
R841	1-249-417-11	CARBON	1K	5%	1/4W
R842	1-249-409-11	CARBON	220	5%	1/4W
R843	1-249-417-11	CARBON	1K	5%	1/4W
R844	1-249-429-11	CARBON	10K	5%	1/4W
R845	1-249-429-11	CARBON	10K	5%	1/4W
R846	1-249-429-11	CARBON	10K	5%	1/4W
R847	1-249-405-11	CARBON	100	5%	1/4W
R848	1-249-405-11	CARBON	100	5%	1/4W

Ref. No.	Part No.	Description			Remark
R901	1-249-412-11	CARBON	390	5%	1/4W
R902	1-249-412-11	CARBON	390	5%	1/4W
R903	1-249-415-11	CARBON	680	5%	1/4W
R904	1-249-415-11	CARBON	680	5%	1/4W
R905	1-249-409-11	CARBON	220	5%	1/4W
R906	1-249-416-11	CARBON	820	5%	1/4W
R907	1-249-409-11	CARBON	220	5%	1/4W
R908	1-249-412-11	CARBON	390	5%	1/4W
R909	1-249-412-11	CARBON	390	5%	1/4W
R910	1-249-412-11	CARBON	390	5%	1/4W
R911	1-247-820-11	CARBON	360	5%	1/4W
R913	1-249-420-11	CARBON	1.8K	5%	1/4W
R915	1-249-429-11	CARBON	10K	5%	1/4W
R916	1-249-425-11	CARBON	4.7K	5%	1/4W
R917	1-249-417-11	CARBON	1K	5%	1/4W
R918	1-249-429-11	CARBON	10K	5%	1/4W
R919	1-249-429-11	CARBON	10K	5%	1/4W
R920	1-249-441-11	CARBON	100K	5%	1/4W
R921	1-247-895-00	CARBON	470K	5%	1/4W
R922	1-247-895-00	CARBON	470K	5%	1/4W
R923	1-249-421-11	CARBON	2.2K	5%	1/4W
R924	1-249-421-11	CARBON	2.2K	5%	1/4W
R925	1-249-425-11	CARBON	4.7K	5%	1/4W
R926	1-249-434-11	CARBON	27K	5%	1/4W
R927	1-249-429-11	CARBON	10K	5%	1/4W
R928	1-249-429-11	CARBON	10K	5%	1/4W
R929	1-249-434-11	CARBON	27K	5%	1/4W
R930	1-249-429-11	CARBON	10K	5%	1/4W
R931	1-249-429-11	CARBON	10K	5%	1/4W
R932	1-249-429	CARBON	10K	5%	1/4W
R933	1-249-422-11	CARBON	2.7K	5%	1/4W
R934	1-249-422-11	CARBON	2.7K	5%	1/4W
R935	1-249-422-11	CARBON	2.7K	5%	1/4W
R936	1-247-860-11	CARBON	16K	5%	1/4W
R937	1-247-862-11	CARBON	20K	5%	1/4W
R938	1-249-425-11	CARBON	4.7K	5%	1/4W
R939	1-249-437-11	CARBON	47K	5%	1/4W
R940	1-247-866-11	CARBON	30K	5%	1/4W
R941	1-247-860-11	CARBON	16K	5%	1/4W
R942	1-247-862-11	CARBON	20K	5%	1/4W
R943	1-249-425-11	CARBON	4.7K	5%	1/4W
R944	1-249-437-11	CARBON	47K	5%	1/4W
R945	1-247-866-11	CARBON	30K	5%	1/4W
R946	1-247-872-11	CARBON	51K	5%	1/4W
R947	1-247-872-11	CARBON	51K	5%	1/4W
R948	1-249-405-11	CARBON	100	5%	1/4W
R949	1-247-872-11	CARBON	51K	5%	1/4W
R950	1-247-872-11	CARBON	51K	5%	1/4W
R951	1-249-405-11	CARBON	100	5%	1/4W
R952	1-249-415-11	CARBON	680	5%	1/4W
R953	1-249-415-11	CARBON	680	5%	1/4W
R954	1-249-429-11	CARBON	10K	5%	1/4W
R955	1-249-429-11	CARBON	10K	5%	1/4W
R971	1-249-429-11	CARBON	10K	5%	1/4W
R972	1-247-903-00	CARBON	1M	5%	1/4W
R973	1-249-417-11	CARBON	1K	5%	1/4W
R974	1-249-417-11	CARBON	1K	5%	1/4W
R975	1-249-429-11	CARBON	10K	5%	1/4W

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description
RV701	1-230-721-11	RES, ADJ, CARBON 10K
RV751	1-230-721-11	RES, ADJ, CARBON 10K

< CERAMIC >

Ref. No.	Part No.	Description
X901	1-577-358-21	VIBRATOR, CERAMIC

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MISCELLANEOUS

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Ref. No.	Part No.	Description
10	1-590-578-11	WIRE, FLAT TYPE 19P
11	1-590-577-11	WIRE, FLAT TYPE 17P
12	1-590-576-11	WIRE, FLAT TYPE 11P
61	1-590-575-12	WIRE, FLAT TYPE 11P
115	1-590-459-11	WIRE, FLAT TYPE
116	1-590-574-11	WIRE, FLAT TYPE 7P
CN1301	⚠1-555-750-00	CORD, POWER (AEP, G, IT)
CN1301	⚠1-556-035-00	CORD, POWER (UK)
CN1302	⚠1-526-751-00	OUTLET, AC (AC OUTLET) (UK)
CN1302	⚠1-526-794-11	OUTLET, AC (AC OUTLET) (AEP, G, IT)
F1301	⚠1-532-388-51	FUSE (2.0A)
F1302	⚠1-532-350-00	FUSE (4.0A)
F1303	⚠1-532-350-00	FUSE (4.0A)
F1304	⚠1-532-388-51	FUSE (2.0A)
F1305	⚠1-532-388-51	FUSE (2.0A)
HP1	A-2003-757-A	BASE ASSY, HEAD (DECK A)
HRP1	A-2003-760-A	BASE ASSY, HEAD (DECK B)
M1	X-3359-415-1	REEL MOTOR ASSY (DECK A)
M2	X-3359-417-1	CAPSTAN MOTOR ASSY (DECK A)
M3	X-3359-415-1	REEL MOTOR ASSY (DECK B)
M4	X-3359-417-1	CAPSTAN MOTOR ASSY (DECK B)
T1301	⚠1-450-398-11	TRANSFORMER, POWER
T1302	⚠1-450-397-11	TRANSFORMER, POWER

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

ACCESSORY & PACKING MATERIAL

Ref. No.	Part No.	Description	Remark
	1-465-697-11	REMOTE COMMANDER	
	1-501-369-11	ANTENNA	
	1-501-374-11	ANTENNA, LOOP	
	3-707-584-01	COVER, BATTERY	
	3-753-137-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE) (AEP)	
	3-753-137-41	MANUAL, INSTRUCTION (GERMANY, DUTCH, SWEDISH, ITALIAN) (AEP, Germany, IT)	
	3-753-137-51	MANUAL, INSTRUCTION (ENGLISH) (UK)	
	4-921-934-01	SHEET, PROTECTION	
	* 4-944-257-01	INDIVIDUAL CARTON (IT)	
	* 4-945-026-01	CUSHION	

* * *

HARDWARE LIST

Ref. No.	Part No.	Description	Remark
# 1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
# 2	7-682-547-04	SCREW +BVTT 3X6 (S)	
# 3	7-682-548-04	SCREW +BVTT 3X8 (S)	
# 4	7-685-650-79	SCREW +BVTP 3X16 TYPE2 IT-3	
# 5	7-627-556-08	SCREW +P 2.6X2.8	
# 6	7-621-775-00	SCREW +B 2.6X3	

Sony Corporation
Audio Group

9-956-242-11

English
91D0657-1
Printed in Japan

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Published by Customer Relations and Service Group

PS-LX46/LX46P/LX47P

SERVICE MANUAL

US Model
PS-LX47P
AEP Model
PS-LX46/LX46P
UK Model
PS-LX46P/LX47P
E Model
PS-LX47P
Australian Model
PS-LX47P

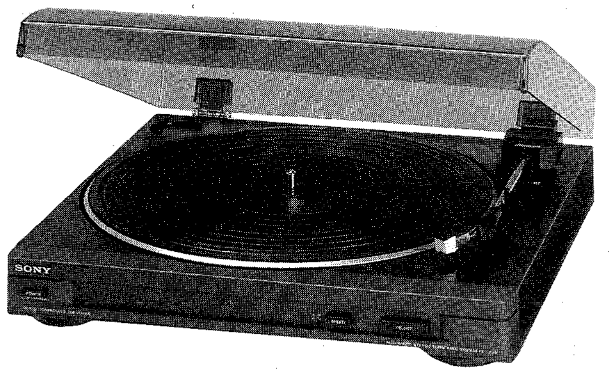


Photo : PS-LX46

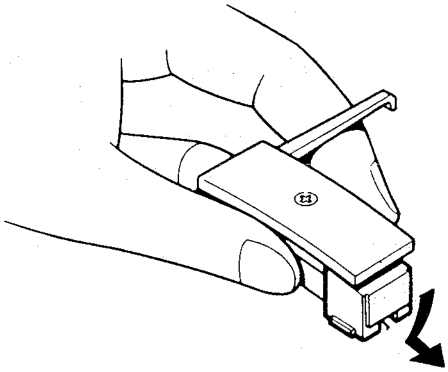
SPECIFICATIONS

Turntable	
Platter	30cm (12 in.)
Motor	DC servo motor
Drive system	Belt drive
Speed	33 ⅓ rpm/45 rpm switchable
Wow and flutter	0.2% (WRMS)
Signal-to-noise ratio	60 dB (DIN-B)
Automatic system	Return, reject
Tonearm	
Type	Dynamically blanced
Pivot-to-stylus length	203 mm (8 in.)
Overall arm length	235 mm (9 ¼ in.)
Cartridge	
Type	Moving magnet type
Frequency response	20 Hz-20kHz
Stylus	ND-155G
General	
Dimensions	355 × 94 × 341 mm(w/h/d) (14 × 3 ¾ × 13 ½ inches)
Weight	Approx. 2.6 kg (5 lb 12 oz)
Power requirements	220V AC, 50/60 Hz
Power consumption	2 W
Accessory supplied	45-rpm adaptor (1)
Optional accessories	Replacement stylus ND-155G Stat spray XP-C10 Cleaner XP-C1, XP-C2

Design and specificatins subject to change without notice.

Note
This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

REPLACING THE STYLUS



Replace the stylus after about 400 hours of use because using a worn stylus will damage records. An ND-155G replacement stylus is avilable at your Sony dealer.
Be sure to turn the amplifier off before proceeding with replacement.

1 While holding the cartridge, detach the stylus assembly as illustrated.
2 Insert the new stylus into the cartridge.

STEREO TURNTABLE SYSTEM

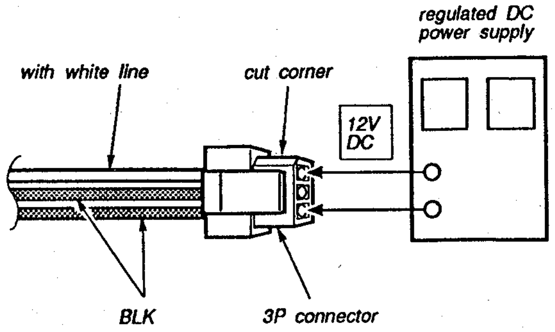
MICROFILM

SONY®

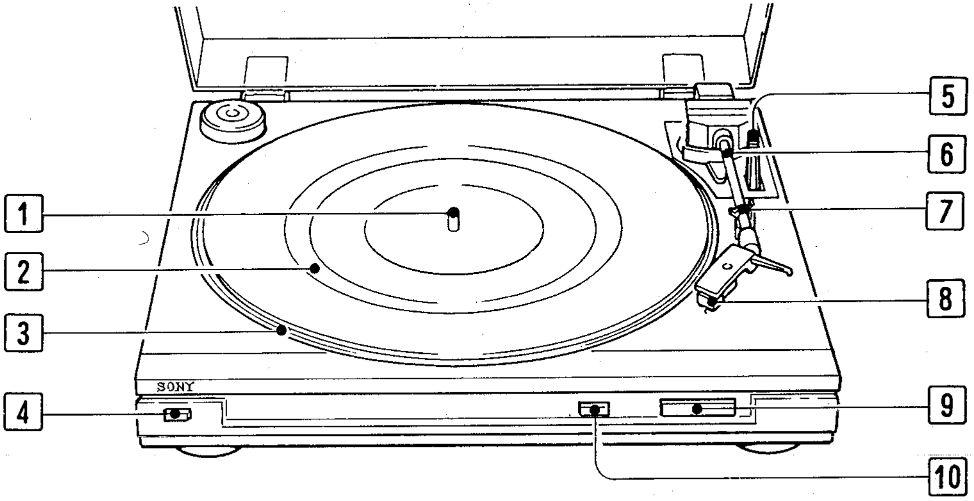
REPAIRING PRECAUTION (PS-LX46P/LX47P only)

[To supply B+voltage]

The power of this unit is fed from HST-D201, D301, D301CD or D501CD. Because of this, connect the regulated power supply as illustrated right when this unit alone operates.


regulated DC power supply
with white line
cut corner
12V DC
BLK
3P connector

LOCATION AND FUNCTION OF CONTROLS


1
2
3
4
5
6
7
8
9
10
SONY

1 **Center spindle**

2 **Rubber mat**

3 **Turntable platter**

4 **POWER switch (PS-LX46 only)**

5 **Cueing lever (▼/▼)**

6 **Tonearm**

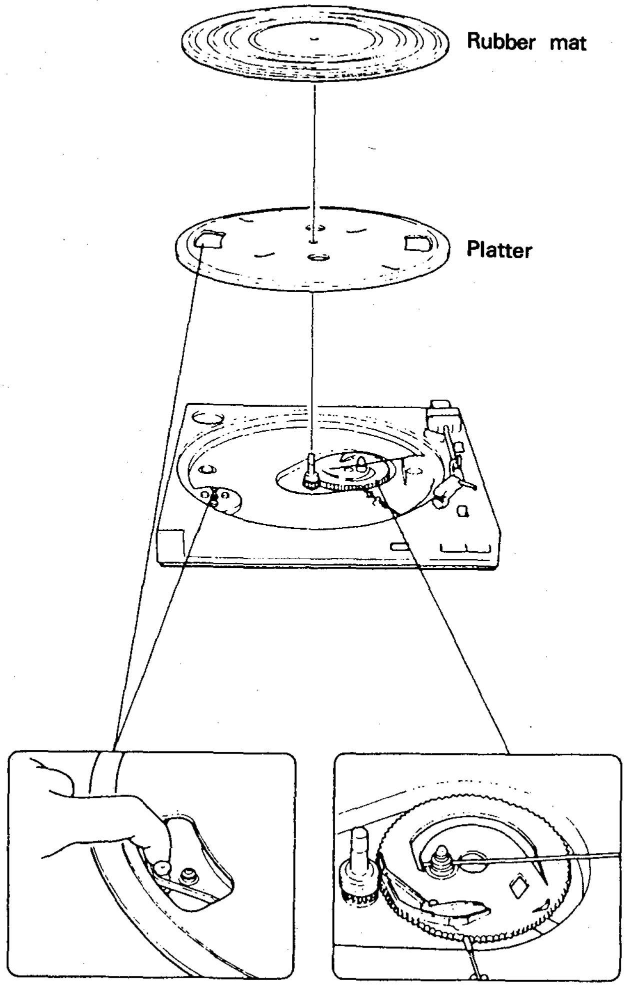
7 **Arm rest**

8 **Cartridge**

9 **REJECT button**

10 **SPEED select button**
Allows selection of 45rpm or 33rpm turntable speed.

TURNTABLE ASSEMBLY

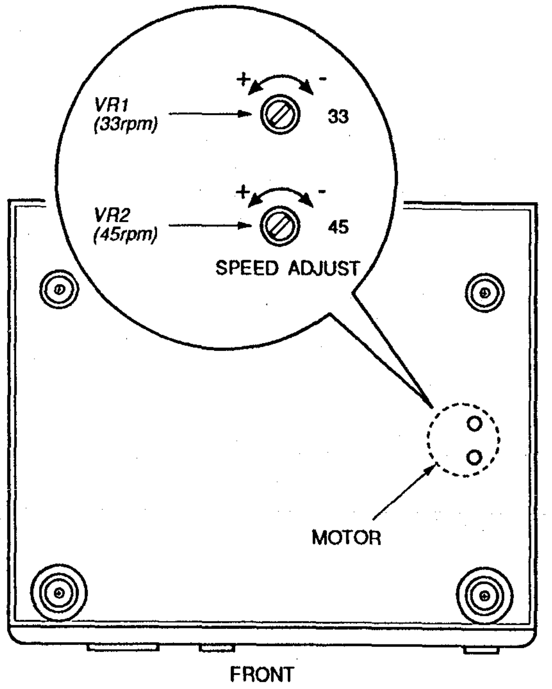

Rubber mat
Platter

Hook the belt on the motor pulley.
If the belt is removed from the platter, replace it with the glossy side outward.

Speed Adjsutment

Note: Be sure to perform 45rpm adjustment before 33rpm.

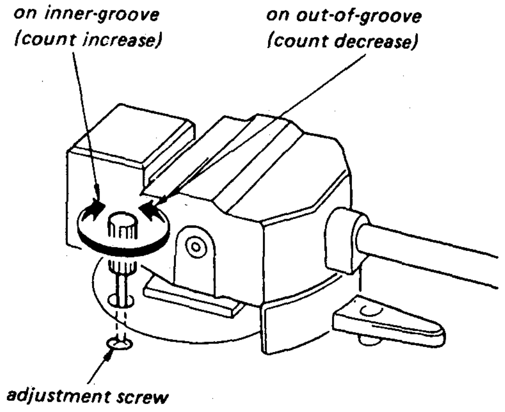
1. Place a stroboscope board on the turntable sheet.
2. Set the SPEED switch to 45.
   Press the START button.
   Ajust VR2 so that the stripped pattern of stroboscope board is stationary.
3. Set the SPEED switch to 33.
   Adjust VR1 in the same way.


VR1
(33rpm)
+
-
33
VR2
(45rpm)
+
-
45
SPEED ADJUST
MOTOR
FRONT

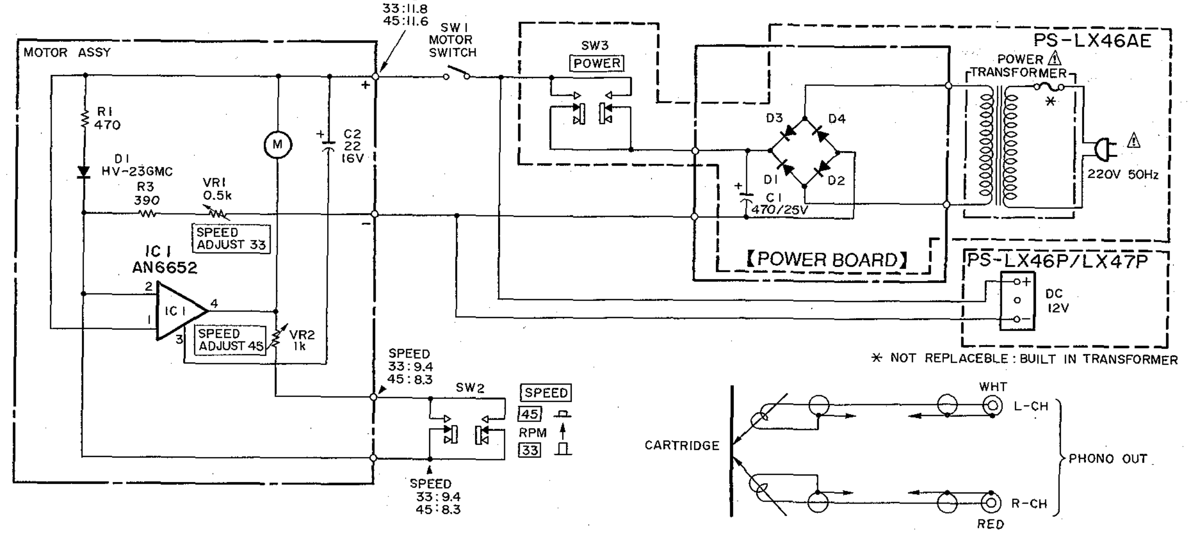
Stylus Drop-point Adjustment

1. Place a test record (YFSC-16) on the turntable sheet.
2. Set the SPEED switch to 33.
3. Press the START button.
4. By using a screwdriver, turn the adjustment screw so that the stylus tip drops on the record at the 7-17 counts position.
5. Move the arm to return detecting groove and confirm that the auto-raturn operation is started normally.

Note: The proper adjustment for a 30cm record is also correct for a 17cm record.
when turning adjustment screw, put the arm on the arm rest.


on inner-groove
(count increase)
on out-of-groove
(count decrease)
adjustment screw

SCHEMATIC DIAGRAM


MOTOR ASSY
SPEED
33:11.8
45:11.6
SW1
MOTOR
SWITCH
SW3
POWER
R1
470
D1
HV-23GMC
R3
390
VR1
0.5k
SPEED
ADJUST 33
M
C2
22
16V
IC1
AN6652
IC1
SPEED
ADJUST 45
VR2
1k
SPEED
33:9.4
45:8.3
SW2
SPEED
45
RPM
33
SPEED
33:9.4
45:8.3
D3
D4
D1
D2
C1
470/25V
【POWER BOARD】
PS-LX46AE
POWER ⚠
TRANSFORMER
*
⚠
220V 50Hz
PS-LX46P/LX47P
DC
12V
* NOT REPLACEBLE : BUILT IN TRANSFORMER
CARTRIDGE
WHT
L-CH
R-CH
RED
PHONO OUT

NOTE:

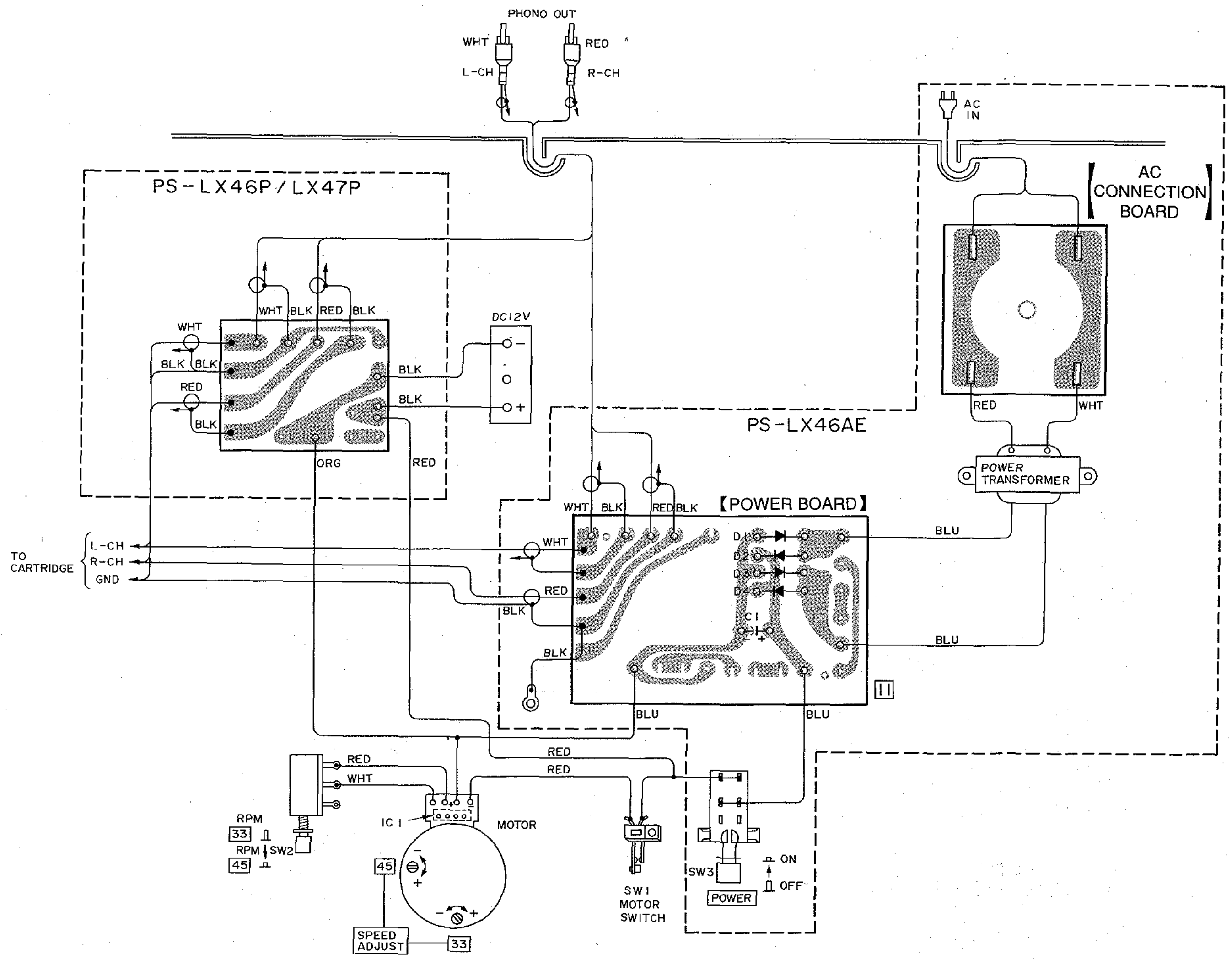
- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.

- Switches :

Ref.No.	Switch	Position
SW1	MOTOR	OFF
SW2	SPEED	33
SW3	POWER	OFF

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

WIRING DIAGRAM

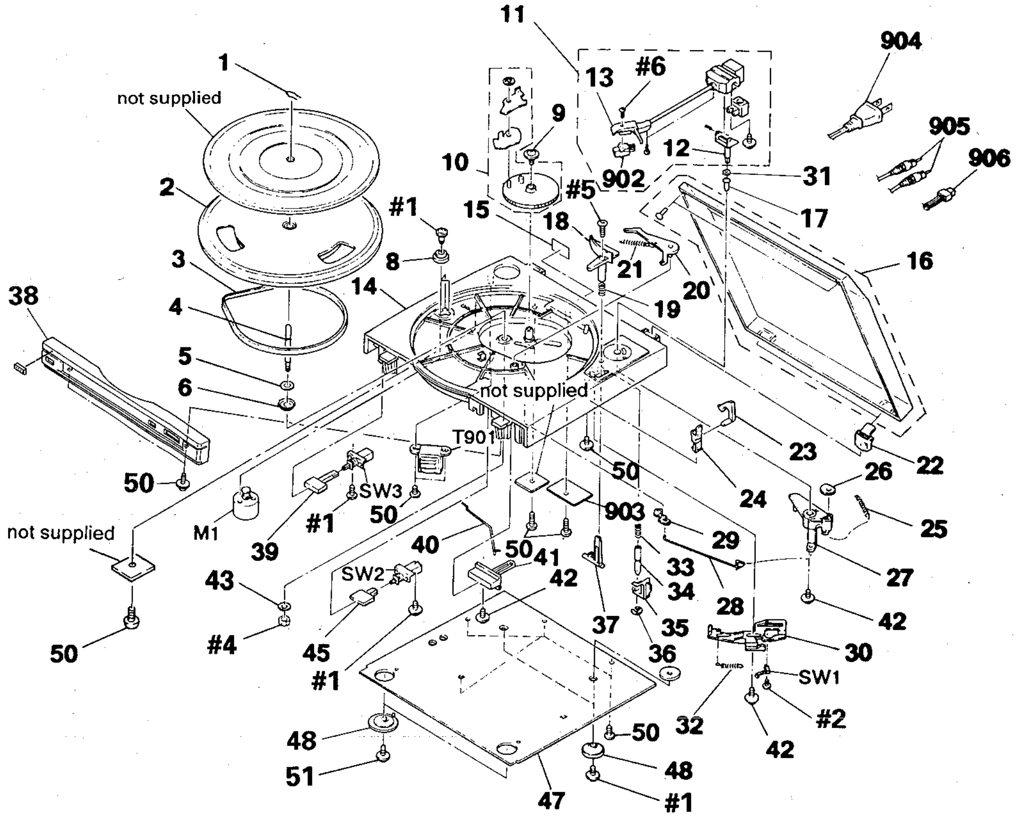

PHONO OUT
WHT
L-CH
RED
R-CH
AC
IN
AC
CONNECTION
BOARD
PS-LX46P/LX47P
WHT
BLK
RED
BLK
WHT
BLK
BLK
RED
BLK
BLK
BLK
DC12V
ORG
RED
RED
WHT
PS-LX46AE
POWER
TRANSFORMER
WHT
BLK
RED
BLK
【POWER BOARD】
TO
CARTRIDGE
L-CH
R-CH
GND
WHT
RED
BLK
BLK
D1
D2
D3
D4
C1
BLU
BLU
BLU
BLU
II
RED
WHT
RED
RED
RPM
33
RPM
SW2
45
IC1
MOTOR
45
SPEED
ADJUST
33
SW1
MOTOR
SWITCH
SW3
POWER
ON
OFF

EXPLODED VIEW

NOTE:

- -XX, -X mean standard parts, so they may have some differences from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Screw(# mark) list is given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.



Ref. No.	Part No.	Description	Remark
1	4-895-490-01	CLIP, SPINDLE	
2	A-4604-243-A	TURNTABLE ASSY	
3	4-943-396-01	BELT	
4	* 4-896-361-01	SPINDLE	
5	4-895-024-01	POLY WASHER	
6	4-943-399-01	WASHER, FLAT	
8	4-895-414-01	GROMMET (A)	
9	4-896-294-01	SCREW (7-BID 3006 2N3A 10D)	
10	4-895-495-01	GEAR, CAM, CLUTCH	
11	A-4604-242-A	ARM ASSY	
12	4-895-464-01	P.U. HINGE BRACKET	
13	4-896-227-01	SHELL, HEAD	
14	* 4-943-945-01	CABINET, MAIN	
15	4-944-400-01	LABEL, MODEL NUMBER (LX46P)	
15	4-944-402-01	LABEL, MODEL NUMBER (LX47P)	
15	4-944-401-01	LABEL, MODEL NUMBER (AE1/IT1) (LX46)	
16	A-4620-041-A	COVER ASSY, DUST	
17	* 4-896-265-01	SHAFT, P.U	
18	4-896-258-01	PLATFORM, LIFT	
19	4-896-267-01	SPRING (A)	
20	* 4-896-364-01	LEVER (REJECT)	
21	4-896-365-01	SPRING (C)	
22	4-896-321-01	HINGE ASSY	
23	4-895-418-01	P.U. TUBE HOOK	

Ref. No.	Part No.	Description	Remark
24	4-943-398-01	REST, P.U	
25	4-895-460-01	ADJUST SPRING	
26	4-895-818-01	CAM, ADJUSTMENT	
27	* 4-896-372-01	LINK, RETURN	
28	4-896-371-01	ROD, TRIP	
29	* 4-896-304-01	LEVER, TRIP	
30	* 4-896-373-01	ARM, SLIDE	
31	3-701-446-01	WASHER	
32	4-896-374-01	SPRING (SLIDE ARM)	
33	4-943-405-01	SPRING, DUMPING	
34	4-896-252-01	SHAFT, ARM LIFT	
35	4-896-253-01	FORK, LIFT	
36	4-896-254-01	RING (DIA. 3), E	
37	4-896-212-01	LEVER, CUE	
38	4-943-948-01	PANEL, FRONT	
39	4-943-949-01	BUTTON (POWER) (LX46)	
40	4-896-367-01	LOT (REJECT)	
41	4-943-944-01	BUTTON (REJECT)	
42	4-896-369-01	SCREW (7-CUP 3008 WF12 ZN3A)	
43	4-943-397-01	WASHER, SPRING	
45	4-943-943-01	BUTTON (SPEED)	
47	* 4-943-946-01	PLATE, BOTTOM	
48	4-895-435-01	FOOT	
50	4-896-375-01	SCREW (7-CUP 3012 WF08 ZN3K)	
51	4-943-406-01	SCREW (7-CUP 3006 WF12 ZN3A)	

ELECTRICAL PARTS LIST

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE : Metal Oxide-film resistor
  F : nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : μ, for example :
  uA...: μA..., uPA...: μPA...,
  uPB...: μPB..., uPC...: μPC...,
  uPD...: μPD...
- CAPACITORS
  MF : μF, PF : μμF
- COILS
  MMH : mH, uH : μH

Ref. No.	Part No.	Description	Remark
902	1-549-135-11	CARTRIDGE	
903	* 1-638-222-11	PC BOARD, CORD	
904 ⚠	· 1-555-795-00	CORD, POWER (LX46)	
905	1-555-116-11	CORD, CONNECTION	
906	1-557-109-21	CORD, CONNECTION (3 CORE)	
C1	1-123-336-00	ELECT 470uF 25V	
D1	8-719-200-02	DIODE 10E2 (LX46)	
D2	8-719-200-02	DIODE 10E2 (LX46)	
D3	8-719-200-02	DIODE 10E2 (LX46)	
D4	8-719-200-02	DIODE 10E2 (LX46)	
M1	A-4604-244-A	MOTOR ASSY	
SW1	1-570-666-11	SWITCH, LEAF	
SW2	1-571-089-11	SWITCH, PUSH (1KEY) (SPEED)	
SW3	1-571-560-11	SWITCH, PUSH (1KEY) (POWER) (LX46)	
T901 ⚠	· 1-449-291-11	TRANSFORMER, POWER (LX46)	

****

Ref. No.	Part No.	Description	Remark
		ACCESSORY & PACKING MATERIAL	
	3-753-018-11	MANUAL, INSTRUCTION	
	3-753-018-41	MANUAL, INSTRUCTION	
	* 4-896-384-01	CUSHION (RIGHT)	
	* 4-896-385-01	CUSHION (LEFT)	

****

Ref. No.	Part No.	Description	Remark
		SCREW	
#1	7-685-646-79	SCREW (7-CUP 3010 WF12 ZN3A)	
#2	7-685-104-19	SCREW (7-PAN 2006 ZN3A)	
#4	7-684-024-04	NUT 50 ZN3A	
#5	7-621-561-49	SCREW (1-FLAT 2612 ZN3K)	
#6	7-627-553-98	SCREW (7-PAN 2008 ZN3K)	

9-956-203-11

Sony Corporation
Audio Group

English
91A1990-1
Printed in Japan

© 1991.1

Published by Customer Relations and Service Group

CDP-M11/M12/M21/M41

SERVICE MANUAL

AEP Model
UK Model
E Model
Australian Model

Photo : CDP-M21

SPECIFICATIONS

Compact disc player

Frequency response	2 Hz – 20 kHz ± 0.5 dB
Signal to noise ratio	More than 100 dB
Dynamic range	More than 97 dB
Harmonic distortion	Less than 0.005%
Channel separation	More than 95 dB

Outputs

LINE OUT (phono jacks)	Output level 2 V (at 50 kilohms) Load impedance over 10 kilohms
PHONES(for CDP-195) HEADPHONES (for CDP-M11) (stereo phone jack)	Output level max. 10 mW Load impedance 32 ohms

General

Power requirements	Model for Continental Europe (CDP-M11,M12,M21) 220-230V AC, 50/60Hz Model for the United Kingdom (CDP-M21,M41) 240V AC, 50/60Hz
Power consumption	12W
Dimensions (approx. , including Projections)	355×95×305 mm (w/h/d) ($14\times3\frac{3}{4}\times12\frac{1}{8}$ inches)
Weight (approx.)	3.2kg (7 lbs 1 oz)

Model Name Using Similar Mechanism	CDP-291/391
CD Mechanism Type	CDM14-5BD1
Optical Pick-Up Block Type	BU-5BD1

Supplied accessories

Audio cord	1 (2 phono plugs – 2 phono plugs)

Design and specifications subject to change without notice.

For the United Kingdom and European countries

CLASS 1 LASER PRODUCT
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

MICROFILM

COMPACT DISC PLAYER

SONY®

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs a laser. Therefore, be sure to follow carefully the instructions below when servicing.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

1. Laser Diode Properties
   - Material: GaAlAs
   - Wavelength: 780nm
   - Emission Duration: continuous
   - Laser Output: max.44.6μW*

     * This output is the value measured at a distance of about 200mm from the objective lens surface on the Optical Pick-up Block.
2. During service, do not take the Optical Pick-up Block apart, and do not adjust the APC circuit. If there is a breakdown in the APC circuit (including laser diode), replace the entire Optical Pick-up Block (including APC borad).

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   - 1-2 Pin Function 5

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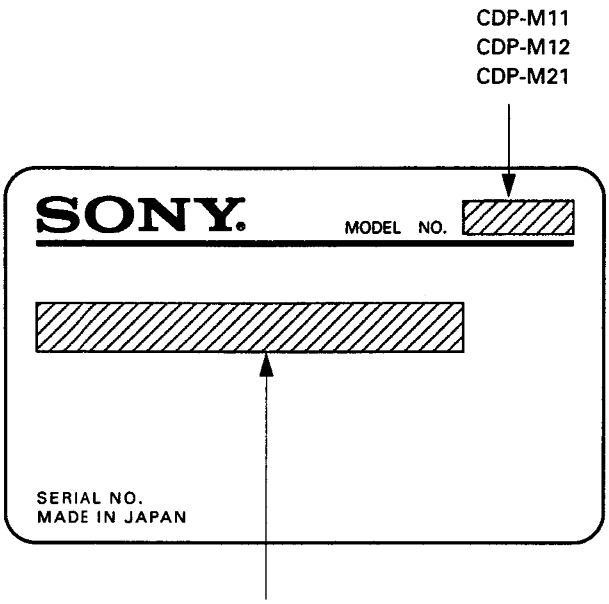
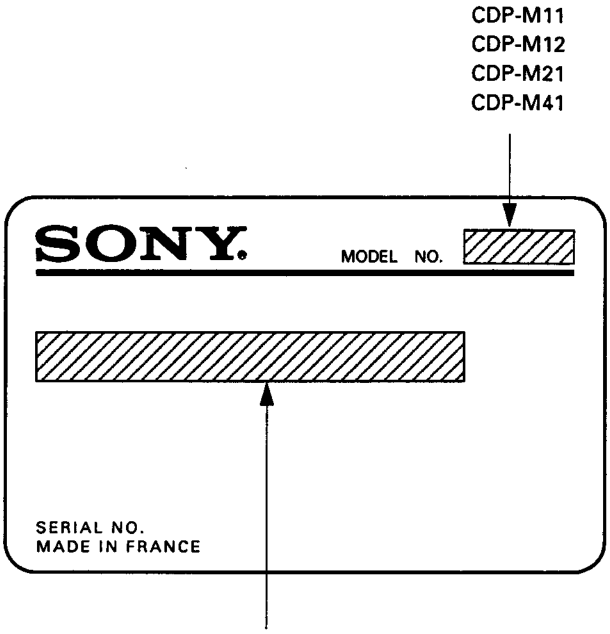
MODEL IDENTIFICATION

- SPECIFICATION LABEL -


CDP-M11
CDP-M12
CDP-M21
SONY.
MODEL NO.
SERIAL NO.
MADE IN JAPAN


CDP-M11
CDP-M12
CDP-M21
CDP-M41
SONY.
MODEL NO.
SERIAL NO.
MADE IN FRANCE

AEP MODEL:	AC220-230V, 50/60Hz
Australian MODEL:	AC240V, 50/60Hz
E, Saudi Arabian MODEL:	AC110-120, 220-240V, 50/60Hz, 12W

AEP MODEL:	AC220-230V, 50/60Hz
UK MODEL:	AC240V, 50/60Hz

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer: Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig.A)

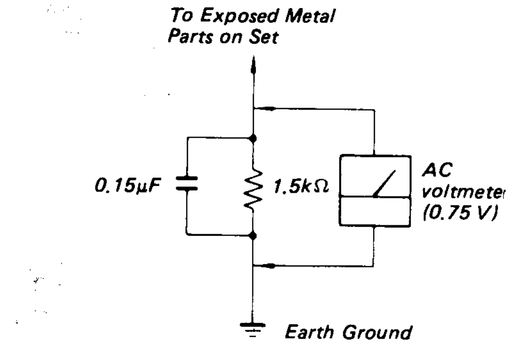
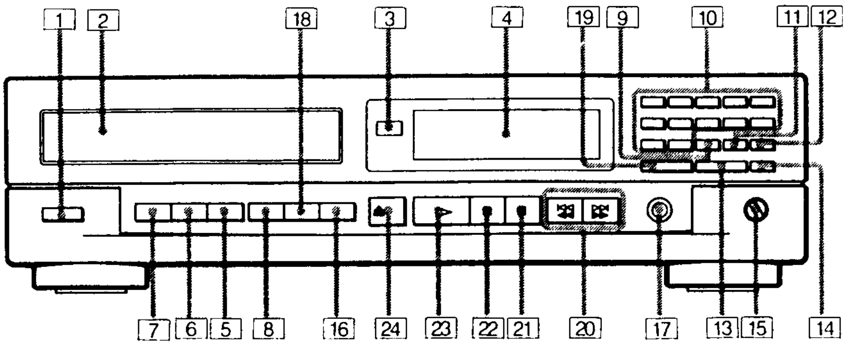

To Exposed Metal Parts on Set
0.15μF
1.5kΩ
AC voltmeter (0.75 V)
Earth Ground

Fig. A. Using an AC voltmeter to check AC leakage.

SECTION 1
GENERAL

1-1. LOCATION OF CONTROLS

This section is extracted from instruction manual.



CDP-M11

1 POWER switch
2 Disc tray
3 Remote sensor*
4 Display window
5 PROGRAM button
6 SHUFFLE button
7 CONTINUE button
8 TIME button
9 CHECK (program check) button
10 Numeric buttons
11 CLEAR (program clear) button
12 >12 (over 12) button
13 MUSIC SCAN button
14 P.SEARCH button
15 PHONE LEVEL control
16 FADER button
17 HEADPHONES jack **(EXCEPT CDP-M12)**
18 REPEAT button
19 EDIT/TIME FADE button
20 ⏮ ◀◀/▶▶ ⏭ (AMS**/RMS***/manual search) buttons
21 ■ (stop) button
22 ❚❚ (pause) button
23 ▶ (play) button
24 ⏏ (open/close) button

1-2. PIN FUNCTION OF IC101 AND IC401

• IC101 (CXA1372Q) PIN FUNCTION

Pin No.	Pin Name	I /O	Description
1	VC	—	GND when two (±) dual power supplies are in use, or the center voltage (2.5V) when a single power supply is in use.
2	FGD	I	Time constants for gain switching in normal mode/down mode and for focus gain are conncted between the FGD and FS3 pins.
3	FS3	I	
4	FLB	I	The capacitor for low frequency boost in the focus servo loop is connected.
5	FEO	O	Focus drive output.
6	FE−	I	Inverted input to focus amplifier.
7	SRCH	I	Time constants to generate the focus search waveform are connected.
8	TGU	I	Time constants for gain switching in normal mode/up mode and for tracking gain are connected between TGU pin and TG2 pin.
9	TG2	I	
10	AVCC	—	Analog power supply (5V when ± dual power supplies are in use, 5V when a single power supply is in use.)
11	TAO	O	Tracking drive output.
12	TA−	I	Inverted input to tracking amplifier.
13	SL+	I	Non-inverted input to sled amplifier.
14	SLO	O	Sled drive output.
15	SL−	I	Non-inverted input to sled amplifier.
16	ESET	I	The 610kΩ phase compensator resistor is connected to this pin.
17	ISET	I	The current setting resistor is connected to this pin.
18	SSTOP	I	The limit switch is connected to this pin.
19	AVEE	—	Analog power supply (−5V when ± dual power supplies are in use, or GND when a single power supply is in use.)
20	DIRC	I	Direct control pin.
21	LOCK	I	Sled run-away prevention circuit operates when this signal is "L".
22	CLK	I	Serial data transfer clock input that is supplied from CPU (or DSP).
23	XLT	I	Latch input from CPU (or DSP).
24	DATA	I	Serial data input from CPU (or DSP).
25	XRST	I	System reset. "L" to reset.
26	C.OUT	O	Output to tracking counter.
27	SENS	O	SENS output.
28	DGND	—	Digital ground (GND). (GND when ± dual power supplies are in use. GND when a single power supply is in use.)
29	MIRR	O	Mirror output.
30	DFCT	O	Defect output. "H" when defective.
31	ASY	I	Auto-assymmetry control input.
32	EFM	O	EFM comparator output.
33	FOK	O	Focus OK.
34	CC2	I	Defect-bottom-hold input (inout by capacitive coupling).
35	CC1	O	Defect-bottom-hold output.
36	DVCC	—	Digital power supply. (+5V when ± dual power supplies in use. +5V when a single power supply is in use.)
37	CB	I	The defect-bottom-hold capacitor is connrcted to this pin.
38	CP	I	The mirror hold capacitor is connected to this pin.
39	RF1	I	RF signal input (input by capacitive coupling).
40	RF0	I	RF signal input (input by DC coupling).
41	DVEE	—	Digital power supply (−5V when ± dual power supplies are in use. GND when a single power supply is in use.)
42	TZC	I	Tracking zero-cross comparator input.
43	TE	I	Tracking error input.
44	TDFCT	I	The defect prevention hold capacitor is connected to this pin.
45	ATSC	I	Anti-shock input.
46	FZC	I	Focus zero-cross comparator input.
47	FE	I	Focus error input.
48	FDFCT	I	The defect prevention hold capactior is connected to this pin.

• IC401 (CXP50112-097Q) PIN FUNCTION

Pin No.	Pin Name	I /O	Description
1 - 4	–	–	Not used (open).
5 - 20	S1 -S16	O	Segment output to FL tube.
21 - 28	1G - 8G	O	Common output to FL tube.
29	SCOR	I	Subcode sync signal S0 + S1 detection input from IC301 (CXD2500AQ).
30	–	–	Not used (open).
31	+5V	–	+5V
32	$\overline{\text{RST}}$	I	Reset input.
33	+5V	–	+5V
34	V_{DD}	–	Power voltage terminal (+5V).
35 - 40	KEY0 - KEY5	I	Key A/D input.
41	–	–	Not used (Ground).
42	TIMER SW	I	Auto play select input (Auto play "L").
43	–	–	Not used (Ground).
44	CLK	O	Serial data transfer clock output to IC301 (CXD2500AQ).
45	DATA	O	Serial data output to IC301 (CXD2500AQ).
46	–	–	Not used (Ground).
47	FOK	I	Focus OK signal input from IC101 (CXA1372Q).
48	GFS	I	Frame sync signal clock status input from IC301 (CXD2500AQ).
49	SUBQ	I	Sub code (Q data) serial input from IC301 (CXD2500AQ).
50	SQCLK	O	Sub code (Q data) readout clock output to IC301 (CXD2500AQ).
51	XLT	O	Serial data latch output.
52	PRGL	O	Attenuate data latch clock output to IC302 (CXD2554P).
53	LDON	O	Laser diode ON/OFF select output of optical pick-up.
54	AMUT	O	Muting output for IC301 (CXD2500AQ) and Q344 (2SC3399). Muting on by "H", Muting off by "L".
55 - 58	B0 - B3	–	Not used (+5V)
59	DEFECT SW	O	Deffect circuit ON/OFF select output to IC101 (CXA1372Q).
60	–	–	Not used (open).
61	SENSE	I	SENS signal input from IC301 (CXD2500AQ).
62	RMC	I	Remote control signal input.
63	$\overline{\text{INSW}}$	I	Input for loading out switch.
64	$\overline{\text{OUTSW}}$	I	Output for loading in switch.
65	ADJ	I	Tset mode input. GFS check will not activate by "L".
66	AFADJ	I	Test mode input. All test operation will be activate by "L" mode when power on.
67	LODIN	O	Output for turn the loading motor to loading.
68	LODOUT	O	Output for turn the loading motor to un loading.
69	LED	O	Output for motor volume LED lighting.
70	–	–	Not used (open).
71	Vss	–	Ground.
72	XTAL	O	Clock output.
73	+5V	–	+5V
74	EXTAL	I	Clock input. (4MHz)
75	+5V	–	+5V
76	−30V	I	Power voltage −30V for built in FL tube controller.
77	–	O	Not used (open).
78	–	O	Not used (open).
79	VDL DOWN	O	Output for motor volume down. (This set is not used).
80	VOL UP	O	Output for motor volume up. (This set is not used).

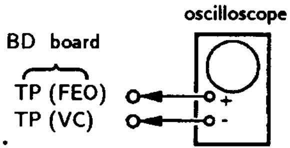
SECTION 2

ELECTRICAL BLOCK CHECKING

Note :

1. CD Block basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than 10MΩ impedance.
4. Clean an object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

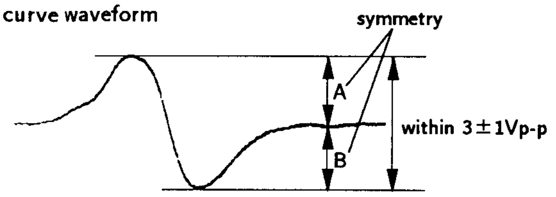
S Curve Check



Procedure :

1. Connect oscilloscope to test point TP (FEO) on BD board.
2. Connect between test point TP (FES) and TP (VC) by lead wire.
3. Turned Power switch on and actuate the focus serch. (actuate the focus serch when disc table is moving in and out.)
4. Check the oscilloscope waveform (S curve) is symmetrical between A and B. And confirm peak to peak level within 3±1Vp-p.

S curve waveform

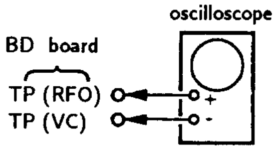


5. After check, remove the lead wire connected in step 2.

Note : • Try to mesure several times to make sure that the ratio of A : B or B : A is more than 10 : 7.

• Take sweep time as long as possible and light up the brightness to obtain best waveform.

RF Level Check



Procedure :

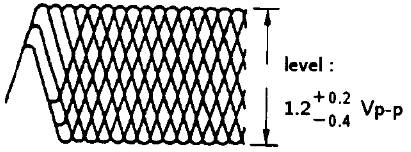
1. Connect oscilloscope to test point TP (RFO) on BD board.
2. Turn Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

Note :

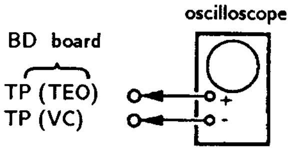
Clear RF signal waveform means that the shape "◇" can be clearly distinguished at the center of the waveform.

RF signal waveform

VOLT/DIV : 200mV
TIME/DIV : 500nS



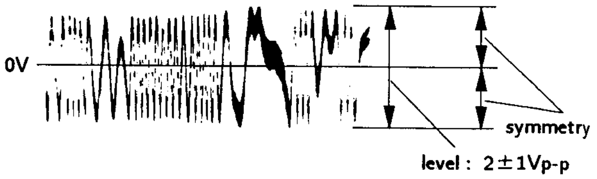
E-F Balance Check



Procedure :

1. Connect test point TP (ADJ) to ground and TP (TES) to TP (VC) with lead wire.
2. Connect oscilloscope to test point TP (TEO) on BD board.
3. Turn Power switch on.
4. Put disc (YEDS-18) in and playback.
5. Confirm that the osilloscope waveform is symmetrical on the top and bottom in relation to 0V, and check this level.

Traverse oscilloscope

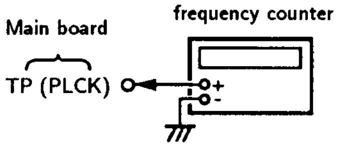


6. Remove the lead wire connected in step 1.

RF PLL Free-run Frequency Check

Procedure :

1. Connect frequency counter to test point (PLCK) with lead wire.


Main board
frequency counter
TP (PLCK)
+
-

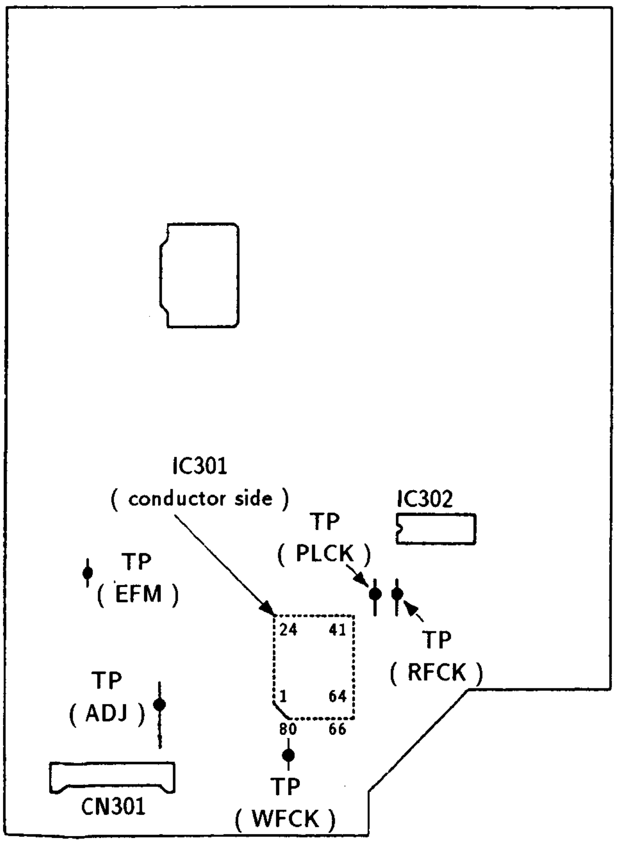
2. Turn Power switch on.
3. Confirm that reading on frequency counter is 4. 3218MHz.

Focus/Tracking Gain

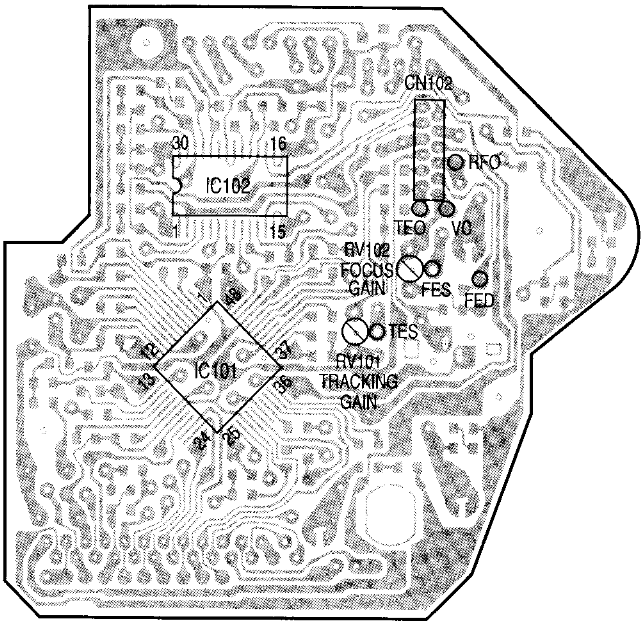
This gain has a margin, so even if it is slightly off. There is no problem.
Therefore, do not perform, this adjustment.
Please note that it should be fixed to mechanical center position when you moved and do not know original position.

Adjustment Location ;

【MAIN BOARD】 – Component Side –


IC301
(conductor side)
IC302
TP
(PLCK)
TP
(EFM)
24
41
1
64
80
66
TP
(RFCK)
TP
(ADJ)
CN301
TP
(WFCK)

[BD BOARD] – Component Side –


CN102
RFO
30
16
IC102
1
15
TEO
VC
RV102
FOCUS
GAIN
FES
FED
TES
RV101
TRACKING
GAIN
IC101
1
48
12
13
37
36
24
25

SECTION 3
DISASSEMBLY OF BASEUNIT

Note :

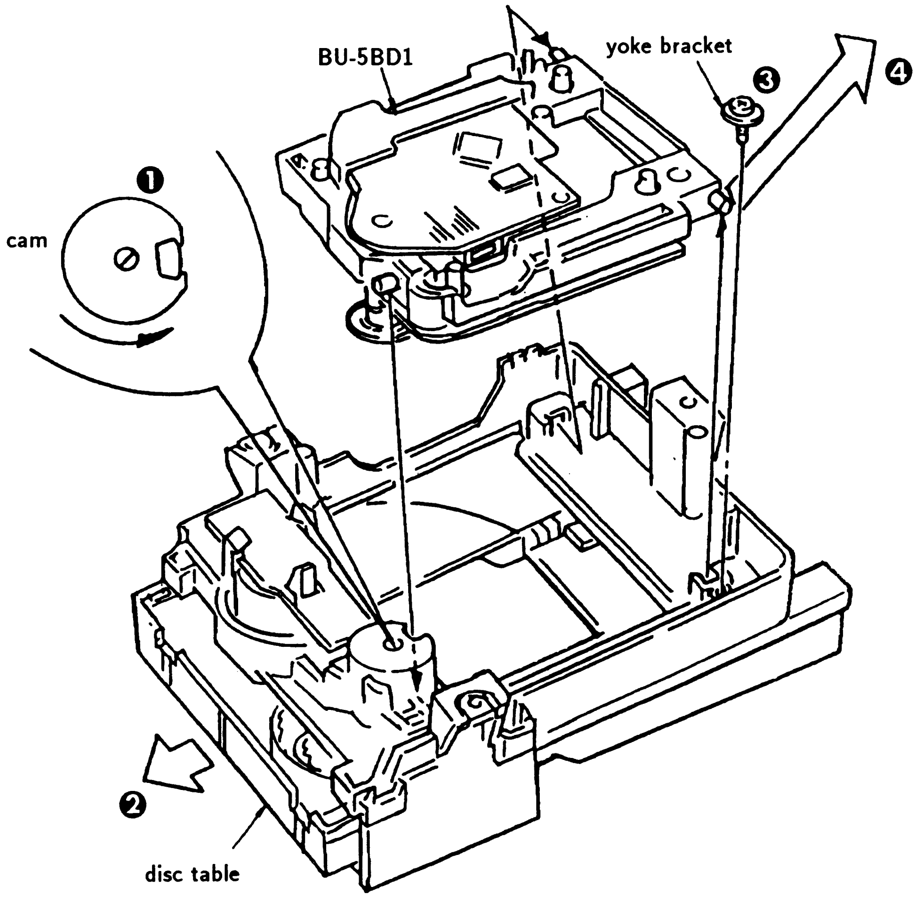
Follow the disassembly procedure in the nomerical order given.

❶ Turn the cam to the direction of arrow (Counter clock wise) by minus screw driver.

❷ Take off the disc table.

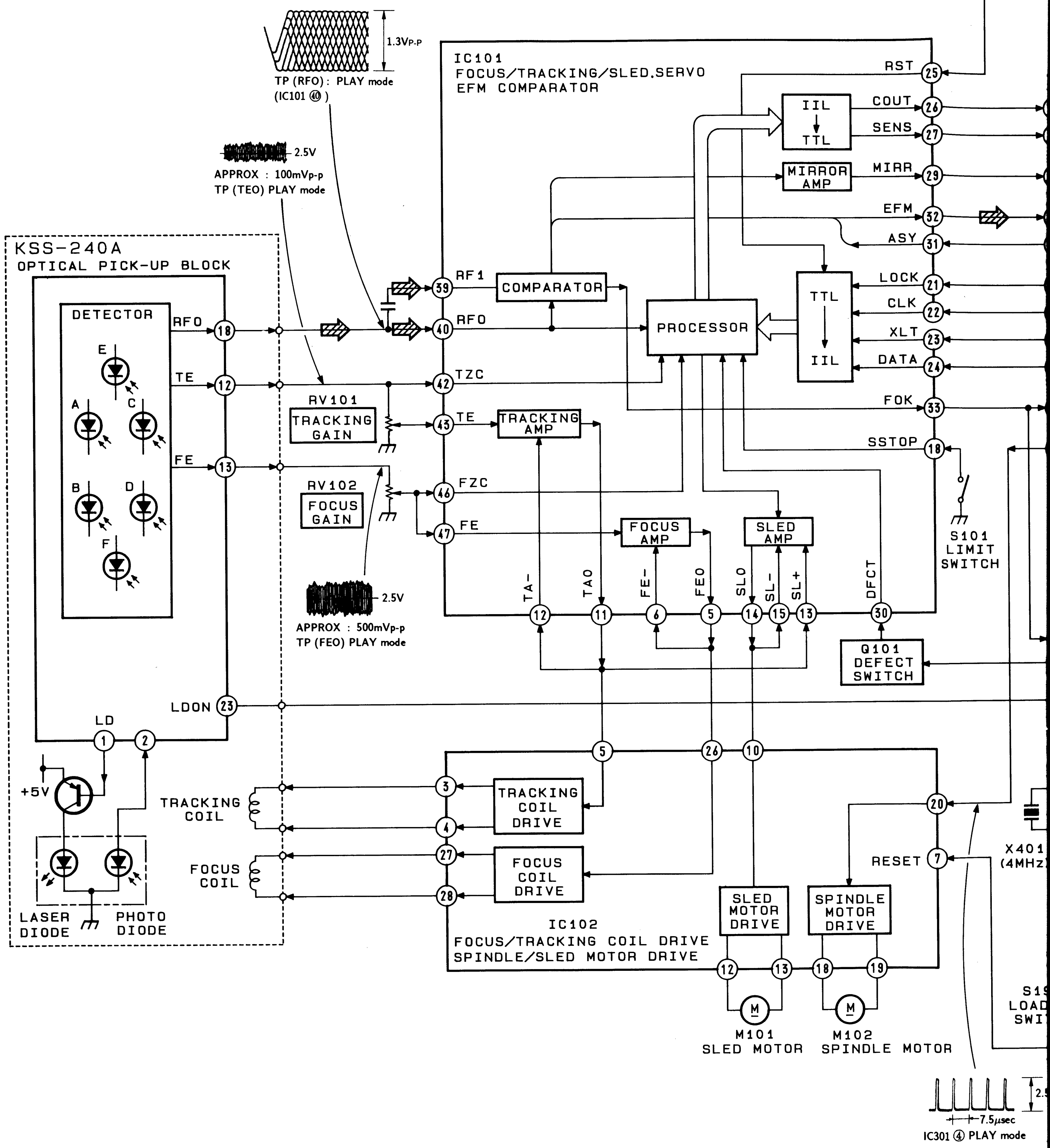
❸ Remove the yoke bracket.

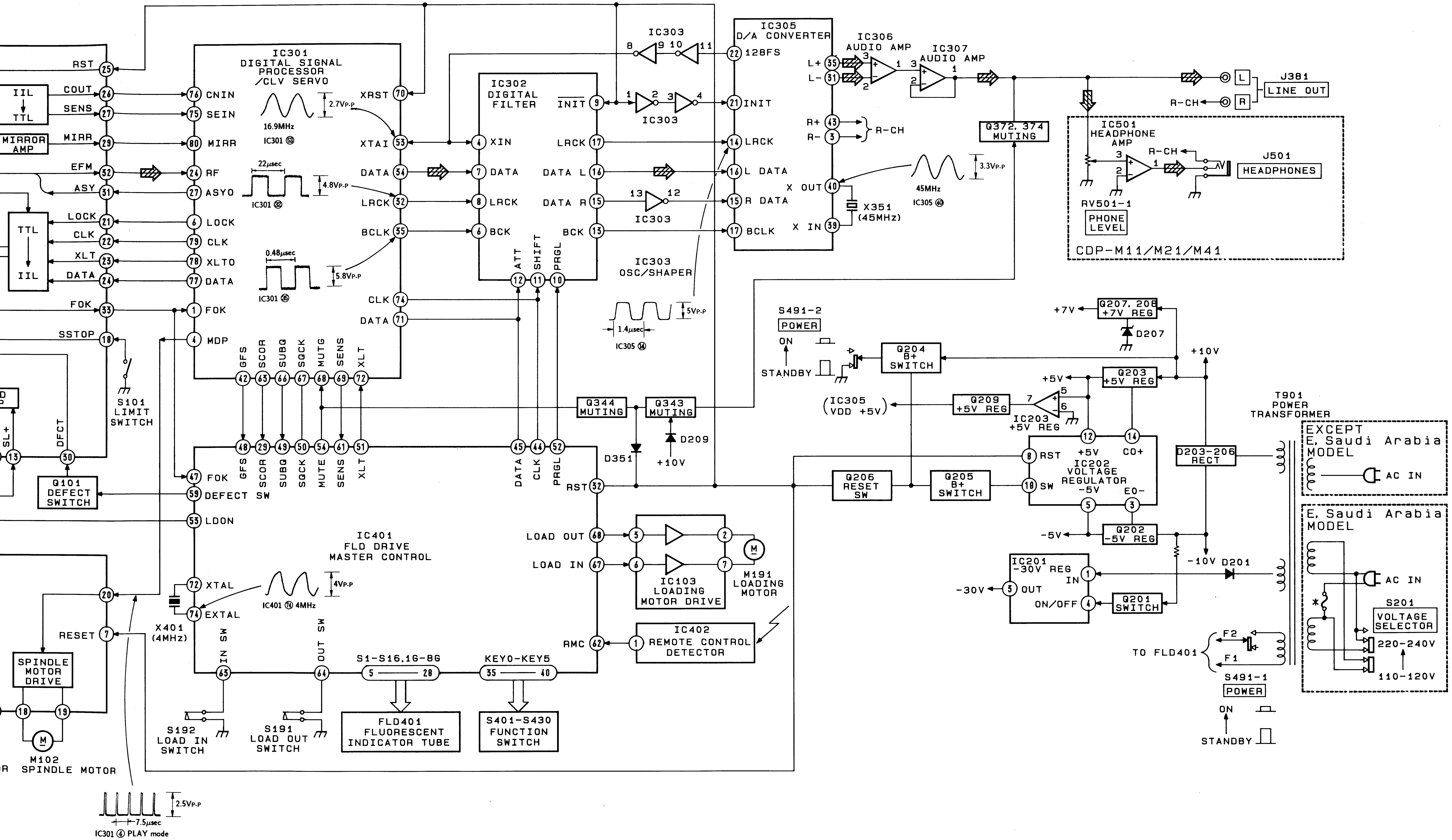
❹ Remove the MD (BU-5BD1) to the direction of arrow.


BU-5BD1
yoke bracket
❸
❹
❶
cam
❷
disc table

SECTION 4
DIAGRAMS

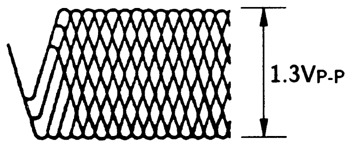
4-1. BLOCK DIAGRAM


1.3Vp-p
TP (RFO) : PLAY mode
(IC101 ㊵)
2.5V
APPROX : 100mVp-p
TP (TEO) PLAY mode
IC101
FOCUS/TRACKING/SLED.SERVO
EFM COMPARATOR
RST ㉕
IIL
TTL
COUT ㉖
SENS ㉗
MIRROR AMP
MIRR ㉙
EFM ㉜
ASY ㉛
KSS-240A
OPTICAL PICK-UP BLOCK
DETECTOR
E
A
C
B
D
F
RFO ⑱
TE ⑫
FE ⑬
LDON ㉓
RF1 ㊴
RFO ㊵
COMPARATOR
PROCESSOR
TTL
IIL
LOCK ㉑
CLK ㉒
XLT ㉓
DATA ㉔
FOK ㉝
SSTOP ⑱
TZC ㊷
TE ㊸
FZC ㊻
FE ㊼
RV101
TRACKING GAIN
RV102
FOCUS GAIN
TRACKING AMP
FOCUS AMP
SLED AMP
2.5V
APPROX : 500mVp-p
TP (FEO) PLAY mode
TA- ⑫
TAO ⑪
FE- ⑥
FEO ⑤
SLO ⑭
SL- ⑮
SL+ ⑬
DFCT ㉚
Q101
DEFECT SWITCH
S101
LIMIT SWITCH
LD
① ②
+5V
LASER DIODE
PHOTO DIODE
TRACKING COIL
FOCUS COIL
⑤ ㉖ ⑩
③ ④ ㉗ ㉘
TRACKING COIL DRIVE
FOCUS COIL DRIVE
IC102
FOCUS/TRACKING COIL DRIVE
SPINDLE/SLED MOTOR DRIVE
SLED MOTOR DRIVE
SPINDLE MOTOR DRIVE
⑳
RESET ⑦
⑫ ⑬ ⑱ ⑲
M
M101
SLED MOTOR
M102
SPINDLE MOTOR
X401
(4MHz
S1
LOAD
SWI
7.5μsec
IC301 ④ PLAY mode


IC301
DIGITAL SIGNAL PROCESSOR /CLV SERVO
IC302
DIGITAL FILTER
IC303
IC303 OSC/SHAPER
IC305
D/A CONVERTER
IC306
AUDIO AMP
IC307
AUDIO AMP
J381
LINE OUT
R-CH
Q372, 374
MUTING
IC501
HEADPHONE AMP
J501
HEADPHONES
RV501-1
PHONE LEVEL
CDP-M11/M21/M41
X351 (45MHz)
16.9MHz IC301 ⑤③
2.7Vp-p
22μsec 4.8Vp-p IC301 ③②
0.48μsec 5.8Vp-p IC301 ③⑤
45MHz IC305 ④⓪ 3.3Vp-p
1.4μsec 5Vp-p IC305 ⑭
RST
COUT
SENS
MIRR
MIRROR AMP
EFM
ASY
LOCK
CLK
XLT
DATA
FOK
SSTOP
IIL
TTL
S101
LIMIT SWITCH
Q101
DEFECT SWITCH
DFCT
SL+
CNIN
SEIN
RF
ASYO
XLTO
MDP
XRST
XTAI
LRCK
BCLK
XIN
BCK
INIT
DATA L
DATA R
128FS
L DATA
R DATA
X OUT
X IN
ATT
SHIFT
PRGL
GFS
SCOR
SUBQ
SQCK
MUTG
MUTE
SENS
Q344
MUTING
Q343
MUTING
D209
+10V
D351
IC401
FLD DRIVE MASTER CONTROL
DEFECT SW
LDON
XTAL
EXTAL
X401 (4MHz)
IC401 ⑦④ 4MHz 4Vp-p
RESET
SPINDLE MOTOR DRIVE
M102
SPINDLE MOTOR
2.5Vp-p 7.5μsec IC301 ④ PLAY mode
IN SW
OUT SW
S192
LOAD IN SWITCH
S191
LOAD OUT SWITCH
S1-S16,16-86
FLD401
FLUORESCENT INDICATOR TUBE
KEY0-KEY5
S401-S430
FUNCTION SWITCH
LOAD OUT
LOAD IN
IC103
LOADING MOTOR DRIVE
M191
LOADING MOTOR
RMC
IC402
REMOTE CONTROL DETECTOR
S491-2
POWER
ON
STANDBY
Q204
B+ SWITCH
(IC305 VDD +5V)
Q206
RESET SW
Q205
B+ SWITCH
Q207, 208
+7V REG
D207
+7V
+10V
Q203
+5V REG
+5V
Q209
+5V REG
IC203
+5V REG
IC202
VOLTAGE REGULATOR
CO+
EO-
-5V
Q202
-5V REG
D203-206
RECT
-10V
D201
IC201
-30V REG
-30V
ON/OFF
Q201
SWITCH
T901
POWER TRANSFORMER
EXCEPT E, Saudi Arabia MODEL
E, Saudi Arabia MODEL
AC IN
S201
VOLTAGE SELECTOR
220-240V
110-120V
TO FLD401
F1
F2
S491-1
POWER
ON
STANDBY

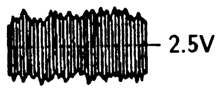
4-2. WAVEFORMS

❶



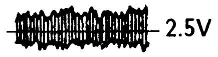
TP (RFO) : PLAY mode
(IC101 ㊵)

❷



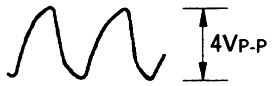
APPROX : 500mVp-p
TP (FEO) PLAY mode

❸



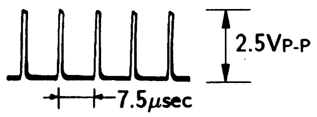
APPROX : 100mVp-p
TP (TEO) PLAY mode

❹



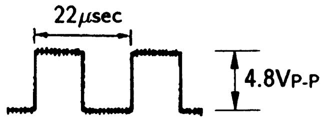
IC401 (74) 4MHz

❺



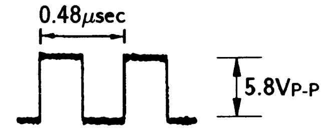
IC301 ④ PLAY mode

❻



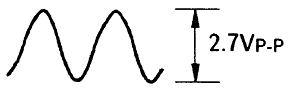
IC301 ㉜

❼



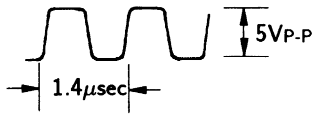
IC301 ㉟

❽



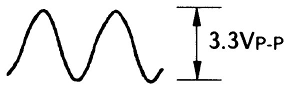
16.9MHz
IC301 (53)

❾



IC305 ⑭

❿



45MHz
IC305 ㊵

• SEMICONDUCTOR LOCATION

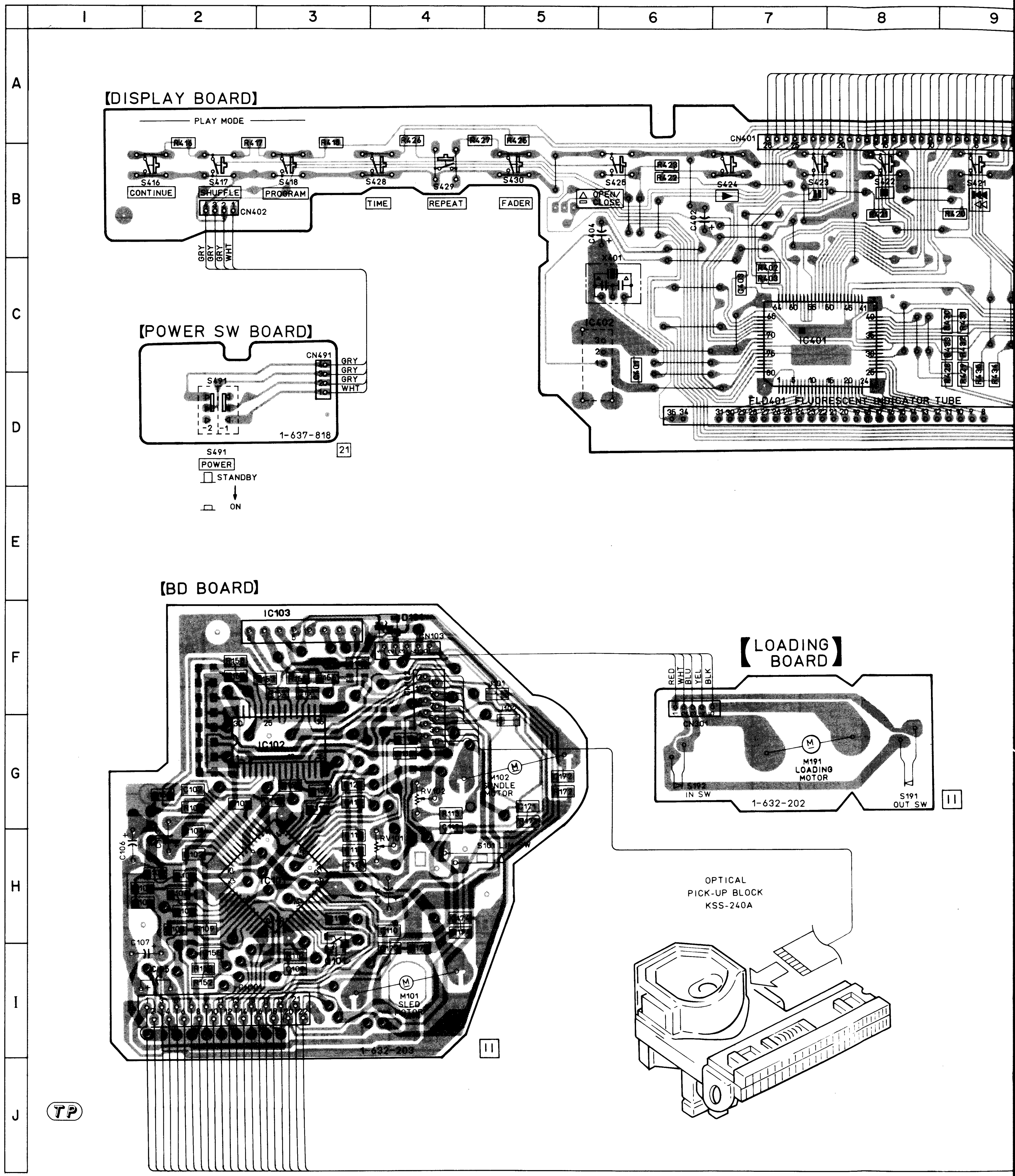
Ref. No.	LOCATION No.	Ref. No.	LOCATION No.
D101	F-4	IC306	C-16
D201	E-20	IC307	C-16
D202	I-20	IC401	C-7
D203	E-19	IC402	C-6
D204	E-19	IC501	H-11
D205	E-19		
D206	E-19	Q101	I-3
D207	G-20	Q201	F-20
D208	F-18	Q202	G-19
D209	F-18	Q203	F-19
D341	F-17	Q204	H-19
D351	G-15	Q205	H-19
		Q206	H-19
IC101	H-3	Q207	G-20
IC102	G-3	Q208	F-20
IC103	F-3	Q209	F-17
IC201	F-20	Q343	D-15
IC202	G-19	Q344	G-14
IC203	G-17	Q371	B-16
IC301	H-17	Q372	C-17
IC302	G-16	Q373	B-16
IC303	F-15	Q374	C-17
IC305	F-16		

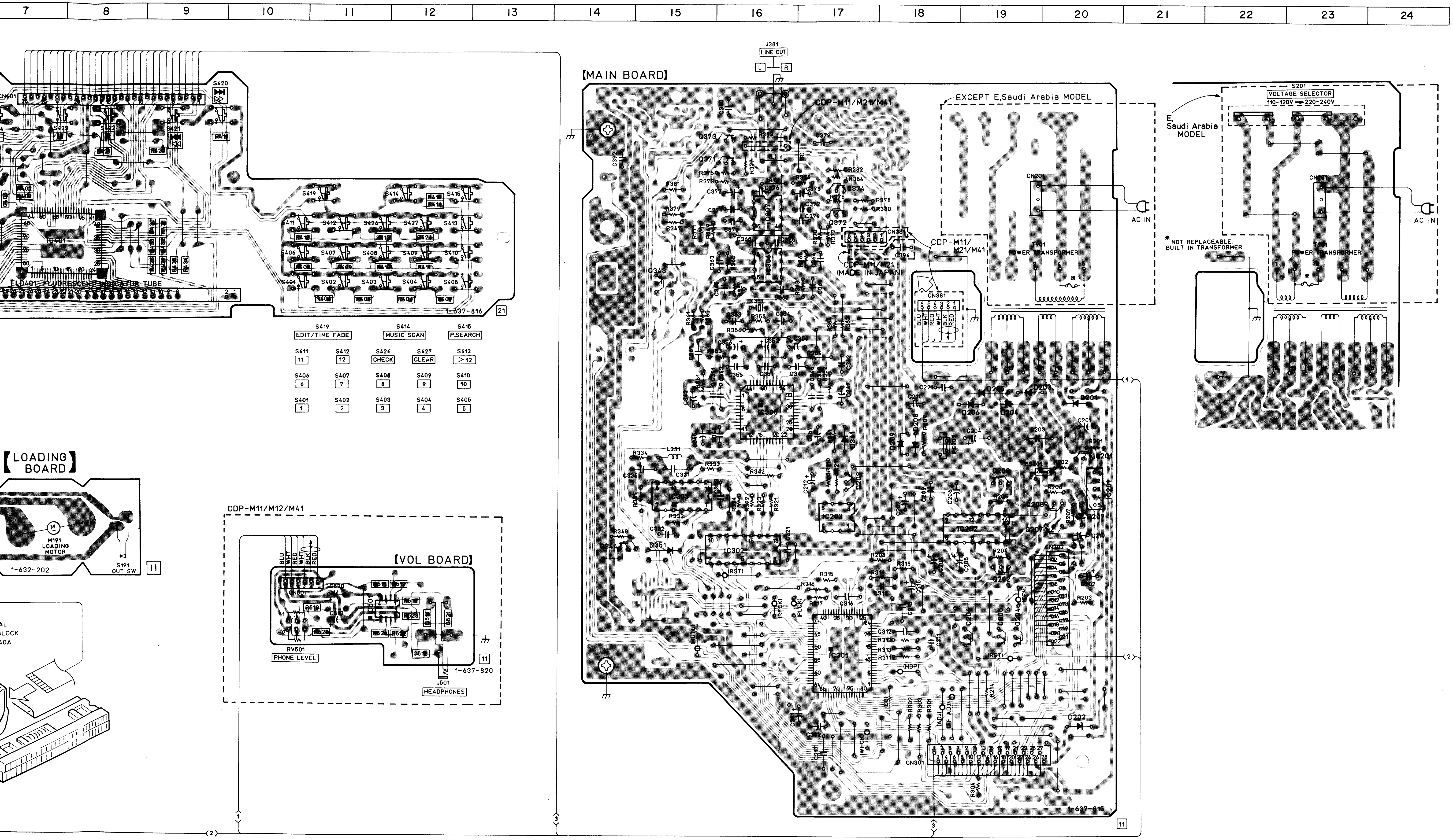
Note:

- o——— : indicated a lead wire mounted on the component side.
- •——— : indicated a lead wire mounted on the conductor side.
- ● : Through hole.
- ■ : Pattern from the side which enables seeing.
- ▨ : Pattern of the rear side.

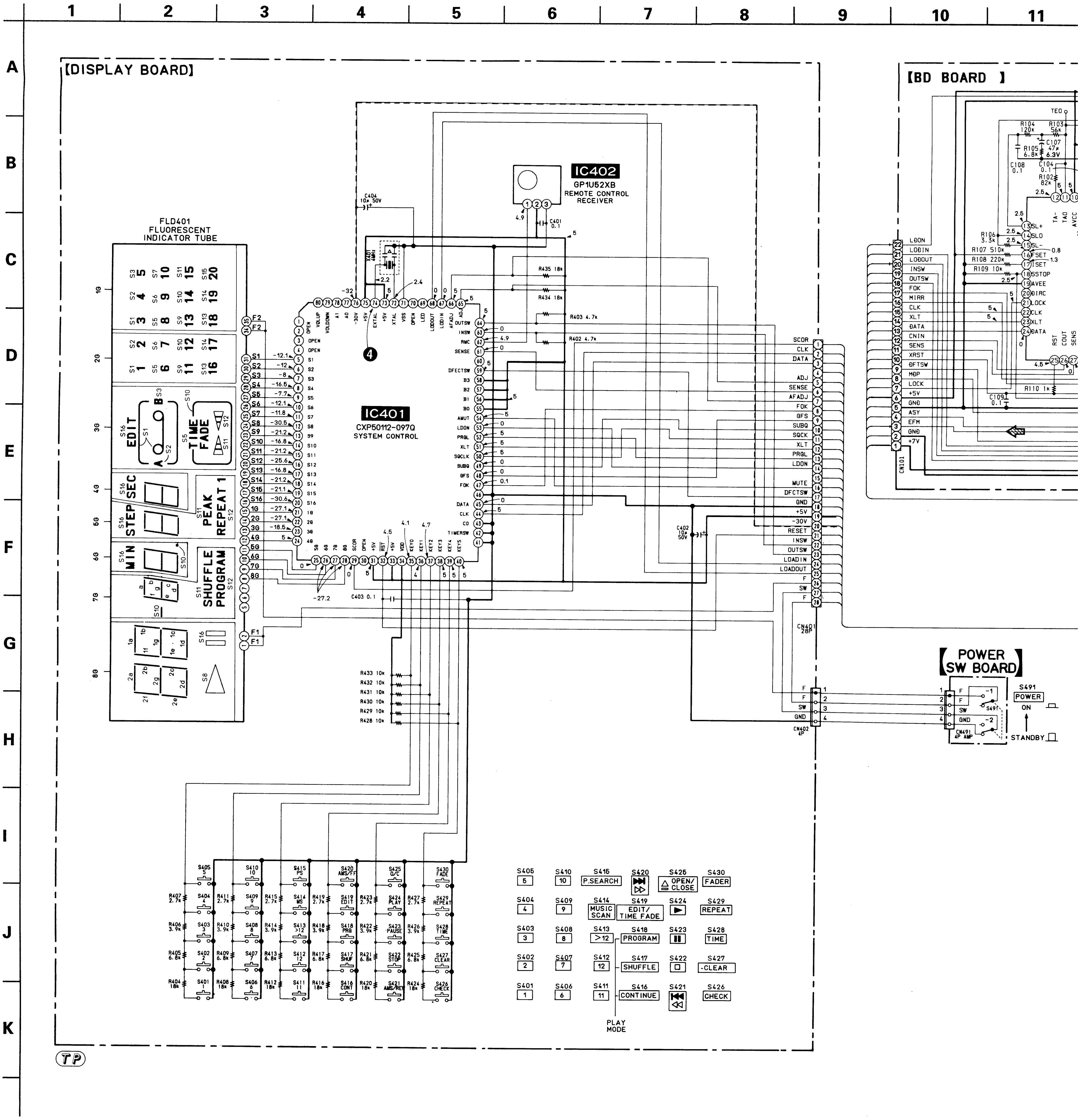
"Semiconductor Lead Layouts" is inserted on P21.

4-3. PRINTED WIRING BOARDS


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
I
J
[DISPLAY BOARD]
PLAY MODE
S416
CONTINUE
S417
SHUFFLE
S418
PROGRAM
S428
TIME
S429
REPEAT
S430
FADER
S426
OPEN/CLOSE
S424
S423
S422
S421
CN401
CN402
GRY
GRY
GRY
WHT
X401
IC402
IC401
FL401 FLUORESCENT INDICATOR TUBE
[POWER SW BOARD]
CN491
GRY
GRY
GRY
WHT
S491
1-637-818
21
S491
POWER
STANDBY
ON
[BD BOARD]
IC103
IC102
C106
C107
M102 SPINDLE MOTOR
M101 SLED MOTOR
1-632-203
11
[LOADING BOARD]
RED
WHT
BLU
YEL
BLK
M191 LOADING MOTOR
S192 IN SW
S191 OUT SW
1-632-202
11
OPTICAL PICK-UP BLOCK KSS-240A
TP


7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
FL401 FLUORESCENT INDICATOR TUBE
IC401
S420
1-637-816
21
S419 EDIT/TIME FADE
S414 MUSIC SCAN
S415 P.SEARCH
S411 11
S412 12
S426 CHECK
S427 CLEAR
S413 >12
S406 6
S407 7
S408 8
S409 9
S410 10
S401 1
S402 2
S403 3
S404 4
S405 5
【LOADING BOARD】
M191 LOADING MOTOR
S191 OUT SW
1-632-202
11
CDP-M11/M12/M41
【VOL BOARD】
CN501
RV501 PHONE LEVEL
J501 HEADPHONES
1-637-820
11
【MAIN BOARD】
J381 LINE OUT
L R
CDP-M11/M21/M41
CDP-M11/M21
(MADE IN JAPAN)
CN381
BLU WHT RED WHT BLK RED
IC301
IC302
IC303
IC304
IC305
IC307
IC201
IC202
IC203
CN301
CN302
(RST)
(MDP)
(MUTE)
(RFCK)
(PLCK)
(WFCK)
(ADJ)
(AF ADJ)
1-637-815
11
EXCEPT E,Saudi Arabia MODEL
CN201
AC IN
T901 POWER TRANSFORMER
E, Saudi Arabia MODEL
S201 VOLTAGE SELECTOR
110-120V ⟶ 220-240V
* NOT REPLACEABLE: BUILT IN TRANSFORMER
1 2 3

4-4. SCHEMATIC DIAGRAM

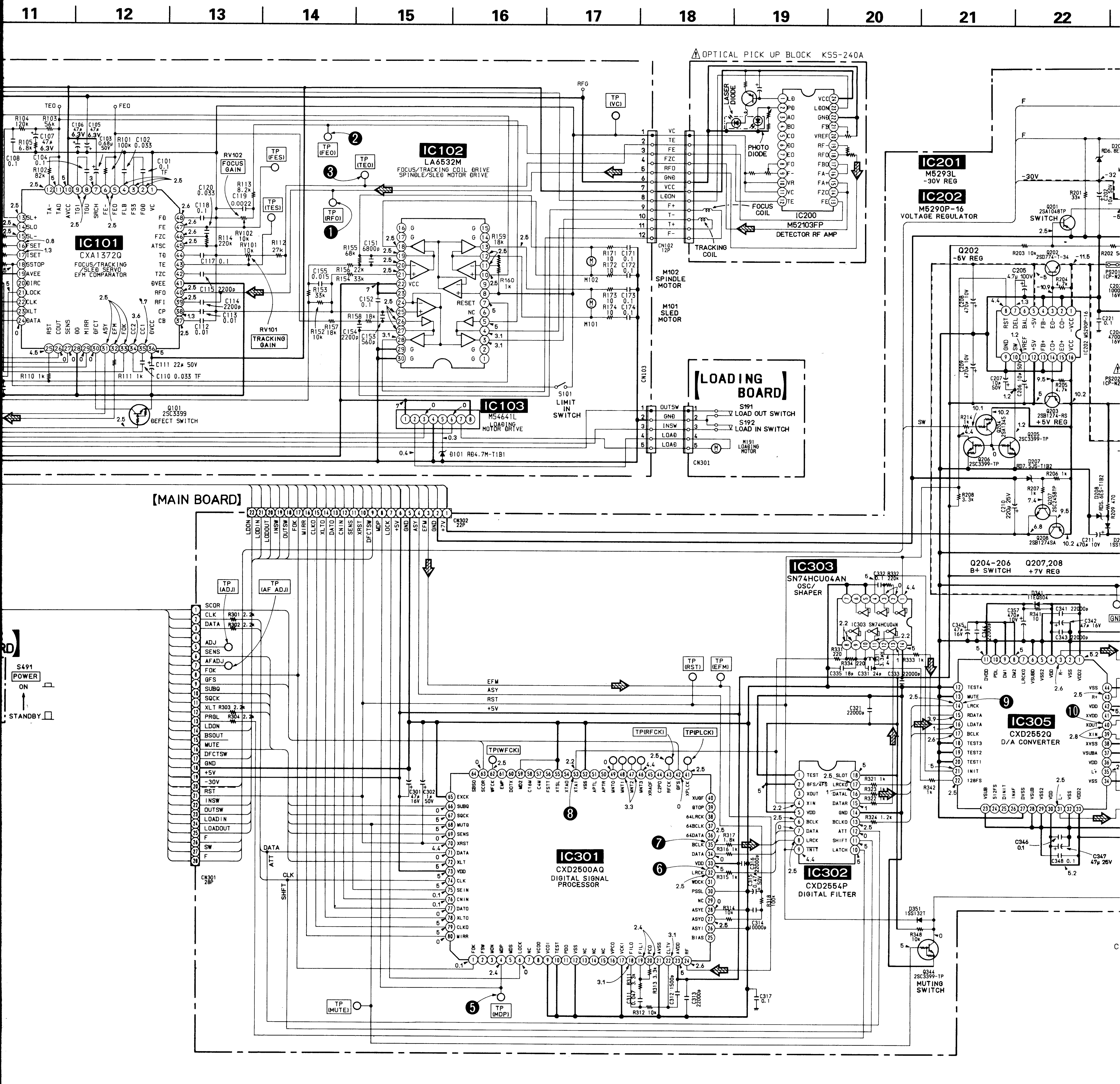

1
2
3
4
5
6
7
8
9
10
11
A
B
C
D
E
F
G
H
I
J
K
[DISPLAY BOARD]
[BD BOARD]
IC402
GP1U52XB
REMOTE CONTROL
RECEIVER
FLD401
FLUORESCENT
INDICATOR TUBE
IC401
CXP50112-097Q
SYSTEM CONTROL
C404 10μ 50V
C401 0.1
C402 10μ 50V
C403 0.1
R435 18k
R434 18k
R403 4.7k
R402 4.7k
R433 10k
R432 10k
R431 10k
R430 10k
R429 10k
R428 10k
EDIT
TIME FADE
SEC
STEP
MIN
PEAK
REPEAT 1
SHUFFLE
PROGRAM
SCOR
CLK
DATA
ADJ
SENSE
AFADJ
FOK
GFS
SUBQ
SQCK
XLT
PRGL
LDON
MUTE
DFCTSW
GND
+5V
-30V
RESET
INSW
OUTSW
LOADIN
LOADOUT
F
SW
F
CN401 28P
CN402 4P
CN101
LDON
LOBIN
LOBOUT
INSW
OUTSW
FOK
MIRR
CLK
XLT
DATA
CNIN
SENS
XRST
DFTSW
MDP
LOCK
+5V
GND
ASY
EFM
GND
+7V
TEO
R104 120k
R103 56k
R105 6.8k
C107 47μ 6.3V
C108 0.1
C104 0.1
R102 82k
R106 3.3k
R107 510k
R108 220k
R109 10k
R110 1k
C109 0.1
POWER SW BOARD
S491 POWER
ON
STANDBY
CN491 4P AMP
S406 5
S410 10
S415 P.SEARCH
S420
S425 OPEN/CLOSE
S430 FADER
S404 4
S409 9
S414 MUSIC SCAN
S419 EDIT/TIME FADE
S424
S429 REPEAT
S403 3
S408 8
S413 >12
S418 PROGRAM
S423
S428 TIME
S402 2
S407 7
S412 12
S417 SHUFFLE
S422
S427 -CLEAR
S401 1
S406 6
S411 11
S416 CONTINUE
S421
S426 CHECK
PLAY MODE
R407 2.7k
R406 3.9k
R405 6.8k
R404 18k
TP

Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, 1/4W or less unless otherwise noted.
- △ : internal component.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

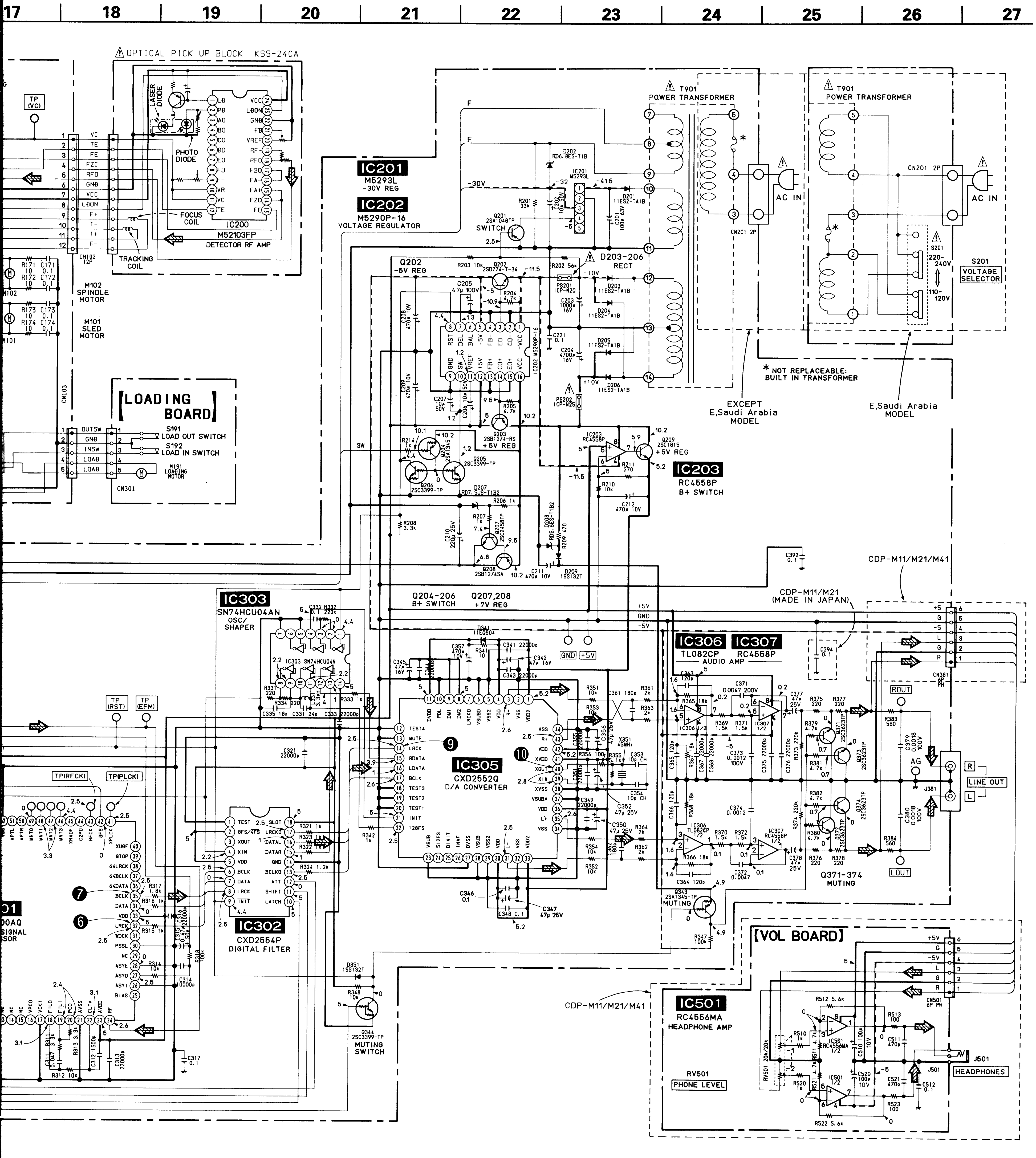
- ▬▬ : B+ Line.
- ▪▪▪▪ : B− Line.
- ☐ : adjustment for repair.
- Voltages are DC between measurement poi
no-signal (STOP) conditions.
- no mark : PB mode
- Voltages are taken with a VOM (input i
Voltage variations may be noted due t
tolerances.
- Waveforms are taken with a oscilloscope
Voltage variations may be noted due to
tolerances.
- Circled numbers refer to waveforms.
- Signal path
⇨ : CD


11
12
13
14
15
16
17
18
19
20
21
22
⚠OPTICAL PICK UP BLOCK KSS-240A
LASER DIODE
PHOTO DIODE
FOCUS COIL
TRACKING COIL
IC200
M52103FP
DETECTOR RF AMP
IC101
CXA1372Q
FOCUS/TRACKING/SLED SERVO EFM COMPARATOR
IC102
LA6532M
FOCUS/TRACKING COIL DRIVE SPINDLE/SLED MOTOR DRIVE
IC103
M54641L
LOADING MOTOR DRIVE
TP (FEO)
TP (TEO)
TP (RFO)
TP (VC)
TP (FES)
TP (TES)
FOCUS GAIN
RV102
RV101
TRACKING GAIN
Q101
2SC3399
DEFECT SWITCH
M102
SPINDLE MOTOR
M101
SLED MOTOR
S101
LIMIT IN SWITCH
CN102
12P
CN103
LOADING BOARD
S191
LOAD OUT SWITCH
S192
LOAD IN SWITCH
M191
LOADING MOTOR
CN301
D101 RD4.7M-T1B1
[MAIN BOARD]
CN302
22P
IC201
M5293L
-30V REG
IC202
M5290P-16
VOLTAGE REGULATOR
Q201
2SA1048TP
SWITCH
Q202
-6V REG
Q203
2SB1274-RS
+5V REG
Q204-206
B+ SWITCH
Q207,208
+7V REG
IC303
SN74HCU04AN
OSC/SHAPER
IC301
CXD2500AQ
DIGITAL SIGNAL PROCESSOR
IC302
CXD2554P
DIGITAL FILTER
IC305
CXD2552Q
D/A CONVERTER
Q344
2SC3399-TP
MUTING SWITCH
TP (ADJ)
TP (AF ADJ)
TP (RST)
TP (EFM)
TP(WFCKI)
TP(RFCKI)
TP(PLCKI)
TP (MUTE)
TP (MDP)
S491
POWER
ON
STANDBY
CN301
28P
EFM
ASY
RST
+5V
DATA
ATT
CLK
SHFT
-30V

capacitors are in μF unless otherwise noted. pF: μμF 50WV
less are not indicated except for electrolytics and tantalums.
resistors are in ohms, 1/4W or less unless otherwise noted.
: internal component.

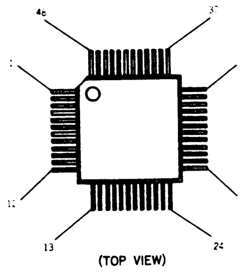
components identified by mark ⚠ or
d line with mark ⚠ are critical for
y.
ce only with part number specified.

- ▬▬ : B+ Line.
- ▪▪▪▪ : B− Line.
- ☐ : adjustment for repair.
- Voltages are DC between measurement points and ground under no-signal (STOP) conditions.
- no mark : PB mode
- Voltages are taken with a VOM (input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path ⇨ : CD

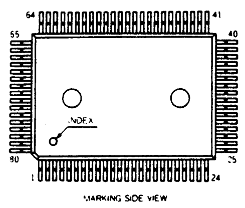

17
18
19
20
21
22
23
24
25
26
27
⚠OPTICAL PICK UP BLOCK KSS-240A
LASER DIODE
PHOTO DIODE
FOCUS COIL
TRACKING COIL
IC200
M52103FP
DETECTOR RF AMP
CN102 12P
M102 SPINDLE MOTOR
M101 SLED MOTOR
LOADING BOARD
S191 LOAD OUT SWITCH
S192 LOAD IN SWITCH
M191 LOADING MOTOR
CN301
IC201
M5293L
-30V REG
IC202
M5290P-16
VOLTAGE REGULATOR
Q201 2SA1048TP SWITCH
Q202 -5V REG
⚠ D203-206 RECT
⚠ T901 POWER TRANSFORMER
AC IN
CN201 2P
✱ NOT REPLACEABLE: BUILT IN TRANSFORMER
EXCEPT E,Saudi Arabia MODEL
E,Saudi Arabia MODEL
S201 VOLTAGE SELECTOR
220-240V
110-120V
IC203
RC4558P
B+ SWITCH
Q209 2SC1815 +5V REG
Q203 2SB1274-RS +5V REG
Q204-206 B+ SWITCH
Q207,208 +7V REG
IC303
SN74HCU04AN
OSC/ SHAPER
TP (RST)
TP (EFM)
TP(RFCK)
TP(PLCK)
IC305
CXD2552Q
D/A CONVERTER
IC302
CXD2554P
DIGITAL FILTER
Q344 2SC3399-TP MUTING SWITCH
IC306
IC307
TL082CP
RC4558P
AUDIO AMP
Q371-374 MUTING
Q343 2SA1345-TP MUTING
ROUT
LOUT
LINE OUT
J381
CN381 6P PH
CDP-M11/M21/M41
CDP-M11/M21 (MADE IN JAPAN)
GND
+5V
[VOL BOARD]
IC501
RC4556MA
HEADPHONE AMP
RV501 PHONE LEVEL
J501 HEADPHONES
CN501 6P PH
⑨
⑩
⑦
⑥

4-5. SEMICONDUCTOR LEAD LAYOUTS

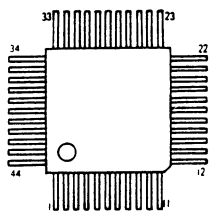
CXA1372Q


48
37
1
36
12
25
13
24
(TOP VIEW)

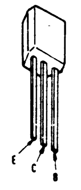
CXD2500AQ
CXP50112-097Q


64
41
65
40
INDEX
80
25
1
24
MARKING SIDE VIEW

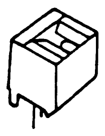
CXD2552Q


33
23
34
22
44
12
1
11

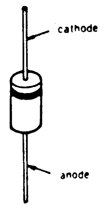
DTA144ES
DTC144ES
2SC2458-YGR
2SC3623A-LK



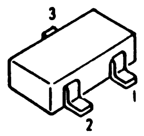
GP1U52XB



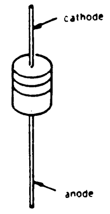
IN4148M


cathode
anode

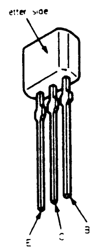
RD4.7M-B1



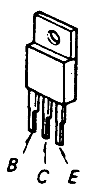
RD5.6ES-B2
RD6.8ES-B1
RD7.5JS-B2
ISS202-1
11ES2
11EQS04


cathode
anode

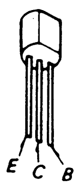
2SA1175-HFE


letter side
E
C
B

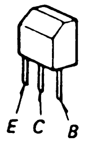
2SB1094-L
2SB1274SA-RS



2SC1815-Y

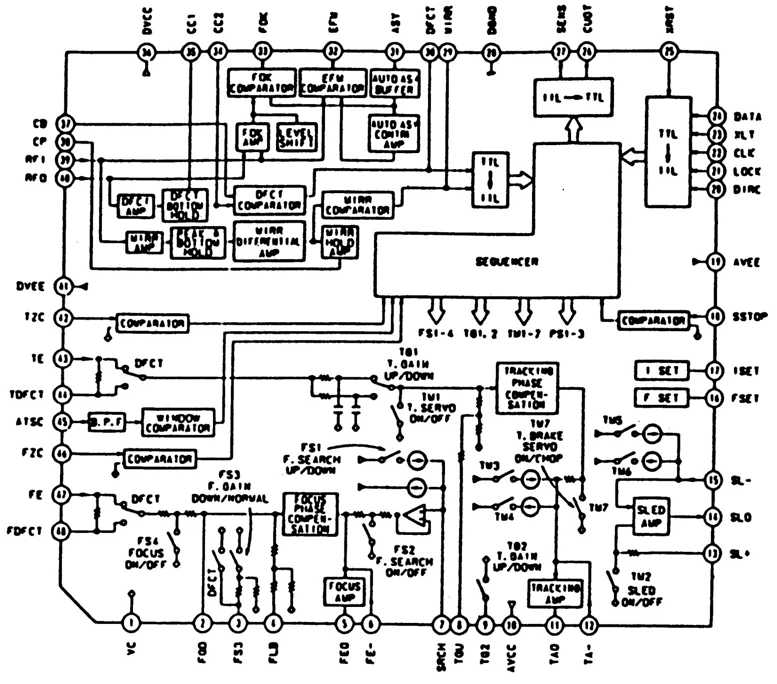


2SD774-34

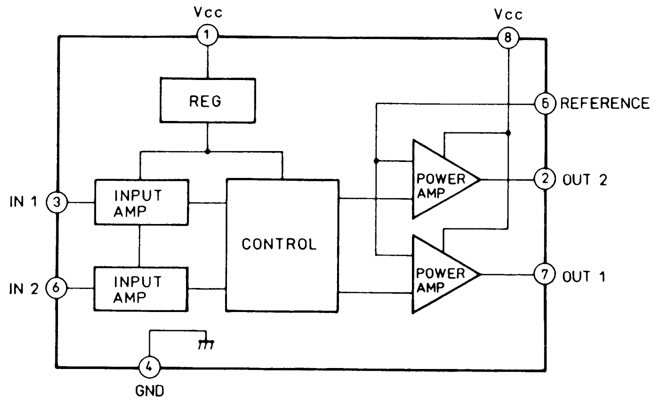


4-6. IC BLOCK DIAGRAMS

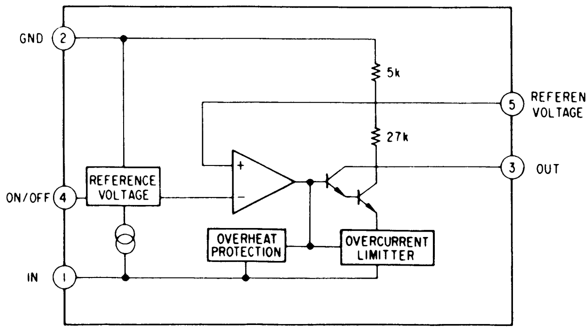
IC101 CXA1372Q


DVCC
CC1
CC2
FOK
EFM
ASY
DFCT
MIRR
DGND
SENS
C.OUT
XRST
CB
CP
RFI
RFO
DVEE
TZC
TE
TDFCT
ATSC
FZC
FE
FDFCT
DATA
XLT
CLK
LOCK
DIRC
AVEE
SSTOP
ISET
FSET
SL-
SLO
SL+
VC
FGD
FS3
FLB
FEO
FE-
SRCH
TGU
TG2
AVCC
TAO
TA-
FOK COMPARATOR
EFM COMPARATOR
AUTO ASY BUFFER
FOK AMP
LEVEL SHIFT
AUTO ASY CONTROL AMP
IIL → TTL
TTL ↓ IIL
DFCT AMP
DFCT BOTTOM HOLD
DFCT COMPARATOR
MIRR COMPARATOR
MIRR AMP
PEAK & BOTTOM HOLD
MIRR DIFFERENTIAL AMP
MIRR HOLD AMP
SEQUENCER
FS1-4
TG1, 2
TM1-7
PS1-3
COMPARATOR
B.P.F
WINDOW COMPARATOR
TG1 T. GAIN UP/DOWN
TM1 T. SERVO ON/OFF
TRACKING PHASE COMPEN-SATION
TM7 T. BRAKE SERVO ON/CHOP
I SET
F SET
TM5
TM6
TM3
TM4
TM7
FS1 F. SEARCH UP/DOWN
FS3 F. GAIN DOWN/NORMAL
FOCUS PHASE COMPEN-SATION
FS2 F. SEARCH ON/OFF
FS4 FOCUS ON/OFF
DFCT
FOCUS AMP
TG2 T. GAIN UP/DOWN
TRACKING AMP
SLED AMP
TM2 SLED ON/OFF

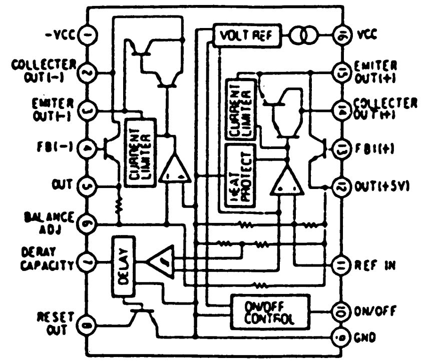
IC103 M54641L


Vcc
1
Vcc
8
REG
6 REFERENCE
2 OUT 2
IN 1 3
INPUT AMP
CONTROL
POWER AMP
IN 2 6
INPUT AMP
POWER AMP
7 OUT 1
4
GND

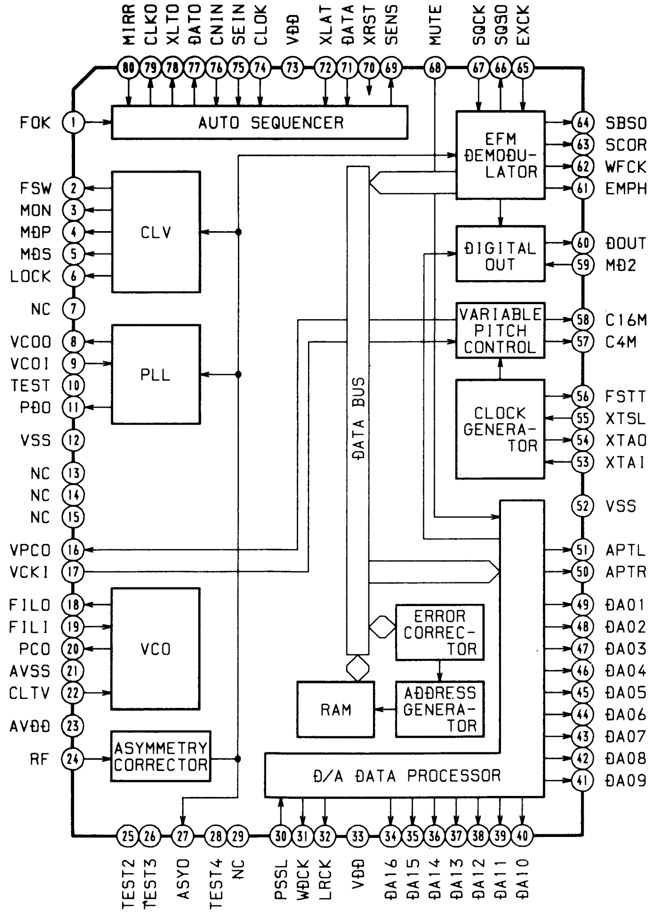
IC201 M5293L


GND 2
5k
5 REFERENCE VOLTAGE
27k
3 OUT
ON/OFF 4
REFERENCE VOLTAGE
OVERHEAT PROTECTION
OVERCURRENT LIMITTER
IN 1

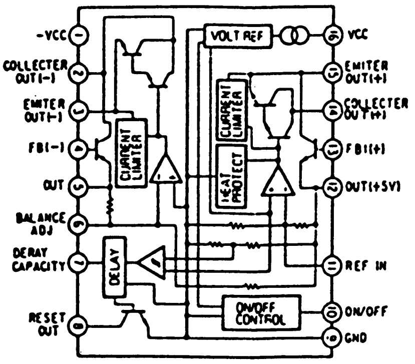
IC202 M5290P-16


-VCC 1
COLLECTER OUT(-) 2
EMITER OUT(-) 3
FB(-) 4
OUT 5
BALANCE ADJ 6
DERAY CAPACITY 7
RESET OUT 8
16 VCC
15 EMITER OUT(+)
14 COLLECTER OUT(+)
13 FB(+)
12 OUT(+5V)
11 REF IN
10 ON/OFF
9 GND
VOLT REF
CURRENT LIMITER
CURRENT LIMITER
HEAT PROTECT
DELAY
ON/OFF CONTROL

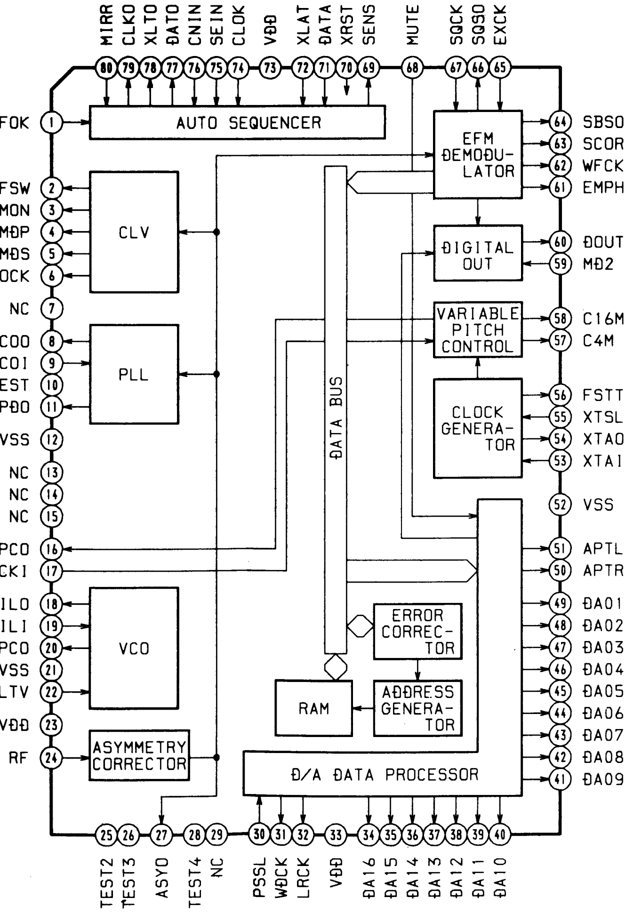
IC301 CXD2500AQ


MIRR 80
CLKO 79
XLTO 78
DATO 77
CNIN 76
SEIN 75
CLOK 74
VDD 73
XLAT 72
DATA 71
XRST 70
SENS 69
MUTE 68
SQCK 67
SQSO 66
EXCK 65
FOK 1
FSW 2
MON 3
MDP 4
MDS 5
LOCK 6
NC 7
VCOO 8
VCOI 9
TEST 10
PDO 11
VSS 12
NC 13
NC 14
NC 15
VPCO 16
VCKI 17
FILO 18
FILI 19
PCO 20
AVSS 21
CLTV 22
AVDD 23
RF 24
64 SBSO
63 SCOR
62 WFCK
61 EMPH
60 DOUT
59 MD2
58 C16M
57 C4M
56 FSTT
55 XTSL
54 XTAO
53 XTAI
52 VSS
51 APTL
50 APTR
49 DA01
48 DA02
47 DA03
46 DA04
45 DA05
44 DA06
43 DA07
42 DA08
41 DA09
25 TEST2
26 TEST3
27 ASYO
28 TEST4
29 NC
30 PSSL
31 WDCK
32 LRCK
33 VDD
34 DA16
35 DA15
36 DA14
37 DA13
38 DA12
39 DA11
40 DA10
AUTO SEQUENCER
EFM DEMODU-LATOR
CLV
DIGITAL OUT
VARIABLE PITCH CONTROL
PLL
DATA BUS
CLOCK GENERA-TOR
VCO
ERROR CORREC-TOR
RAM
ADDRESS GENERA-TOR
ASYMMETRY CORRECTOR
D/A DATA PROCESSOR

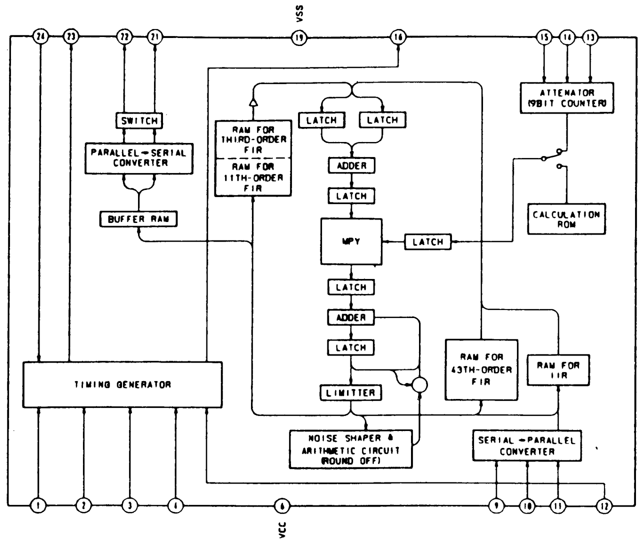
IC202 M5290P-16


-VCC
COLLECTER OUT(-)
EMITER OUT(-)
FBI(-)
OUT
BALANCE ADJ
DERAY CAPACITY
RESET OUT
VOLT REF
CURRENT LIMITER
CURRENT LIMITER
HEAT PROTECT
DELAY
ON/OFF CONTROL
VCC
EMITER OUT(+)
COLLECTER OUT(+)
FBI(+)
OUT(+5V)
REF IN
ON/OFF
GND

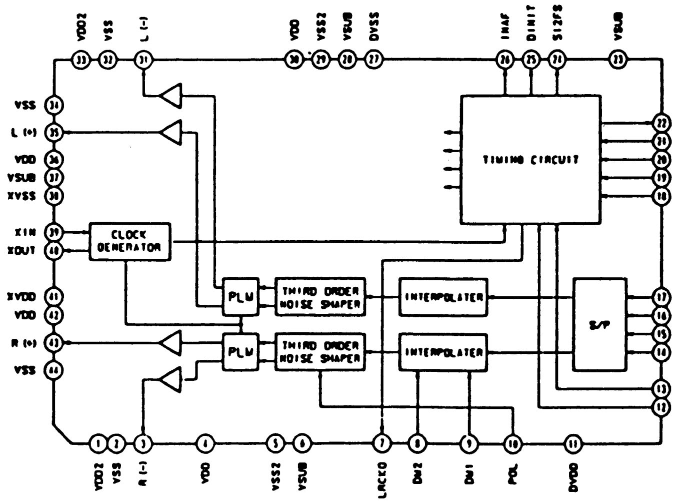
IC301 CXD2500AQ


MIRR
CLKO
XLTO
DATO
CNIN
SEIN
CLOK
VDD
XLAT
DATA
XRST
SENS
MUTE
SQCK
SQSO
EXCK
AUTO SEQUENCER
EFM DEMODU-LATOR
DIGITAL OUT
VARIABLE PITCH CONTROL
CLOCK GENERA-TOR
DATA BUS
CLV
PLL
VCO
ASYMMETRY CORRECTOR
ERROR CORREC-TOR
RAM
ADDRESS GENERA-TOR
D/A DATA PROCESSOR
FOK
FSW
MON
MDP
MDS
OCK
NC
COO
COI
EST
PDO
VSS
NC
NC
NC
PCO
CKI
ILO
ILI
PCO
VSS
LTV
VDD
RF
SBSO
SCOR
WFCK
EMPH
DOUT
MD2
C16M
C4M
FSTT
XTSL
XTAO
XTAI
VSS
APTL
APTR
DA01
DA02
DA03
DA04
DA05
DA06
DA07
DA08
DA09
TEST2
TEST3
ASYO
TEST4
NC
PSSL
WDCK
LRCK
VDD
DA16
DA15
DA14
DA13
DA12
DA11
DA10

IC302 CXD2554P


VSS
SWITCH
PARALLEL→SERIAL CONVERTER
BUFFER RAM
RAM FOR THIRD-ORDER FIR
RAM FOR 11TH-ORDER FIR
LATCH
LATCH
ADDER
LATCH
MPY
LATCH
LATCH
ADDER
LATCH
LIMITTER
NOISE SHAPER & ARITHMETIC CIRCUIT (ROUND OFF)
ATTENATOR (9BIT COUNTER)
CALCULATION ROM
RAM FOR 43TH-ORDER FIR
RAM FOR IIR
SERIAL →PARALLEL CONVERTER
TIMING GENERATOR
VCC

IC305 CXD2552AQ


VDD2
VSS
L (-)
VDD
VSS2
VSUB
DVSS
INAF
DINIT
S12FS
VSUB
VSS
L (+)
VDD
VSUB
XVSS
XIN
XOUT
XVDD
VDD
R (+)
VSS
CLOCK GENERATOR
PLM
PLM
THIRD ORDER NOISE SHAPER
THIRD ORDER NOISE SHAPER
INTERPOLATER
INTERPOLATER
TIMING CIRCUIT
S/P
128FS
INIT
SYNC
TEST2
TEST1
BCKI
DLI
DRI
LRCKI
MUTE
TEST3
VDD2
VSS
R (-)
VDD
VSS2
VSUB
LRCKO
DM2
DM1
POL
DVDD

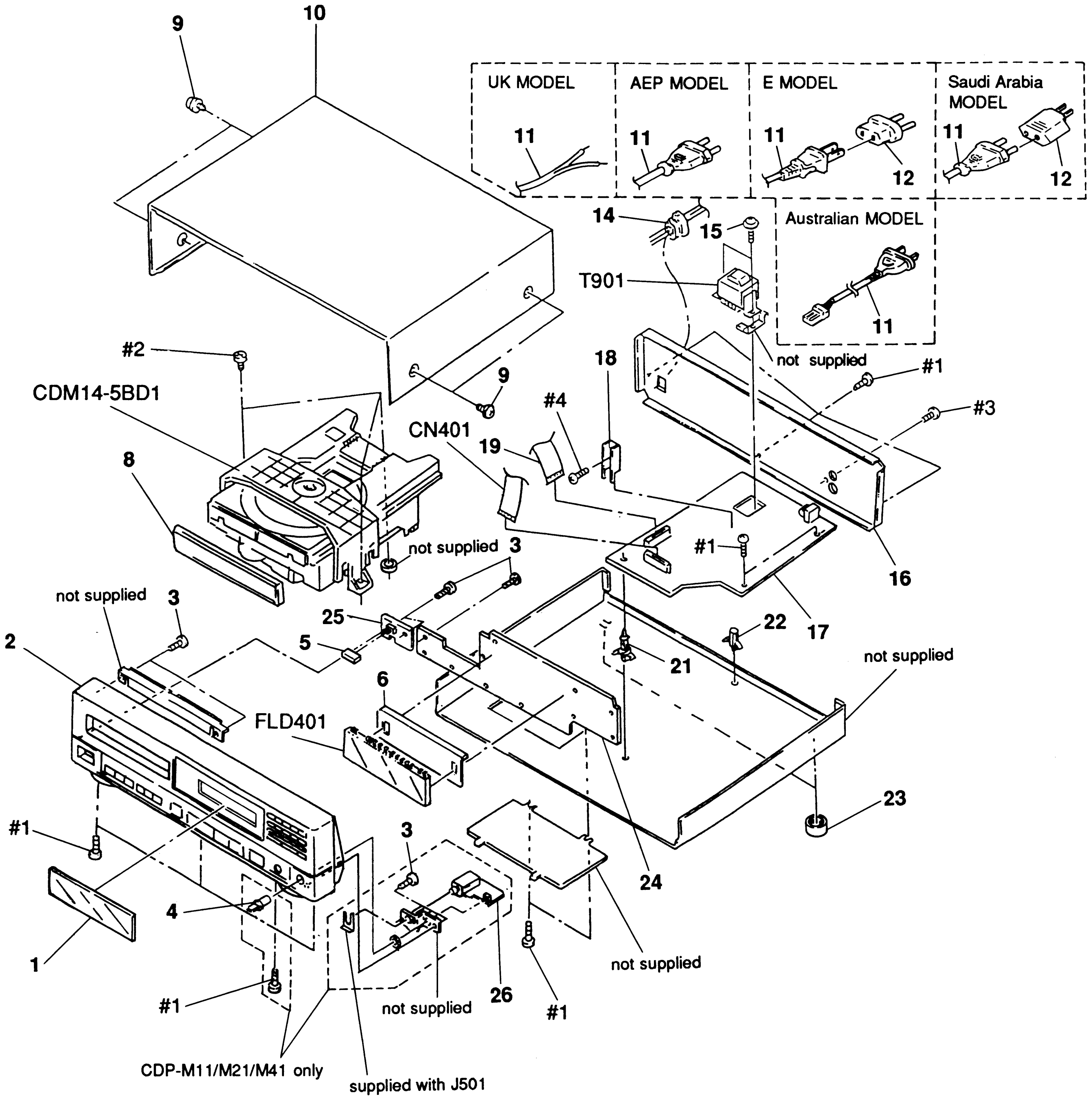
SECTION 5
EXPLODED VIEW

NOTE:

- –XX, –X mean standardized parts, so they may have some differences from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Color Indication of Appearance Parts Example:
  KNOB,BALANCE(WHITE)...(RED)
  ↑ ↑
  Parts color Cabinet's color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware(# mark) list is given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

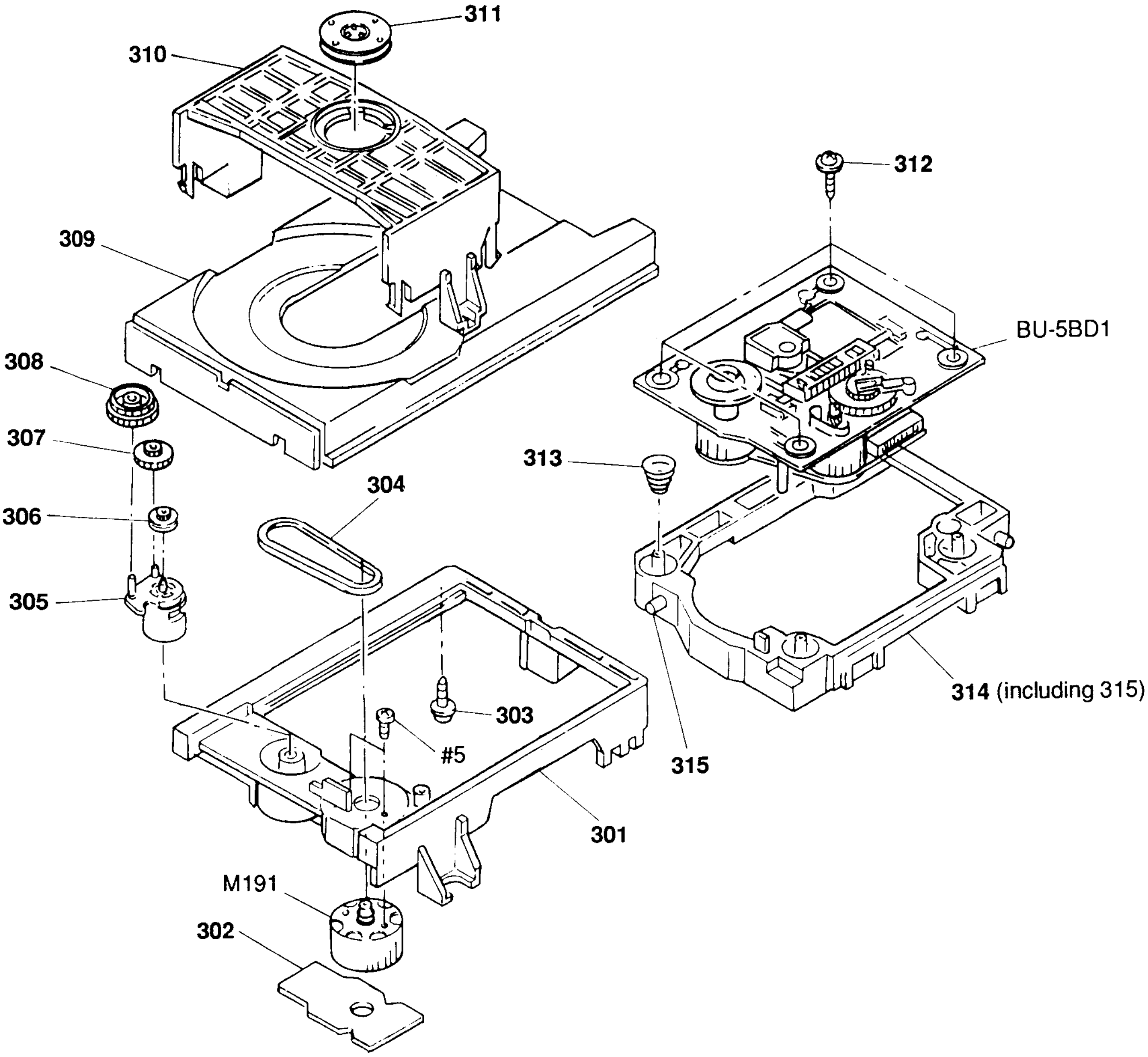
(1) CABINET SECTION


9
10
UK MODEL
AEP MODEL
E MODEL
Saudi Arabia MODEL
11
11
11
12
11
12
Australian MODEL
11
14
15
T901
not supplied
#1
#3
#2
CDM14-5BD1
9
18
#4
CN401
19
8
16
not supplied
3
#1
not supplied
3
25
5
22
17
21
2
not supplied
6
FLD401
#1
23
3
24
4
1
26
not supplied
#1
not supplied
#1
CDP-M11/M21/M41 only
supplied with J501

Ref. No.	Part No.	Description	Remark
1	4-942-977-01	PLATE, INDICATION (M21:AEP/M41:UK)	
1	4-942-977-11	PLATE, INDICATION (M11:AEP/M12:AEP, UK)	
1	4-942-983-01	PLATE, INDICATION (M21:E, Australian)	
1	4-942-983-11	PLATE, INDICATION (M11:E, Australian, Saudi Arabia)	
2	X-4941-318-1	PANEL ASSY, FRONT (M21:AEP)	
2	X-4941-319-1	PANEL ASSY, FRONT (M11:AEP)	
2	X-4941-320-1	PANEL ASSY, FRONT (M12:AEP, UK)	
2	X-4941-325-1	PANEL ASSY, FRONT (M21:E, Australian)	
2	X-4941-327-1	PANEL ASSY, FRONT (M11:E, Australian, Saudi Arabia)	
2	X-4941-455-1	PANEL ASSY, FRONT (M41:UK)	
2	X-4941-557-1	PANEL ASSY, FRONT (GRAY) (M11:AEP)	
3	4-928-635-01	SCREW, +BV (2.6X8) TAPPING	
4	4-922-531-01	KNOB (A TYPE), LOV (M11/M21/M41)	
5	4-927-341-01	BUTTON (POWER)	
6	* 4-923-103-01	HOLDER, FL TUBE	
8	4-942-979-11	PANEL, LOADING (M21:AEP/M41:UK)	
8	4-942-979-21	PANEL, LOADING (M11:AEP)	
8	4-942-979-31	PANEL, LOADING(GRAY) (M11:AEP/M12:AEP, UK)	
8	4-942-979-51	PANEL, LOADING (M21:E, Australian)	
8	4-942-979-61	PANEL, LOADING (M11:E, Australian, Saudi Arabia)	
9	3-704-366-01	SCREW (CASE) (M3X8)	
10	4-919-376-31	CASE (MADE IN JAPAN M11/M21)	
10	4-919-376-51	CASE(MADE IN FRANCE M11/M12:AEP/M41:UK)	
10	4-919-376-61	CASE (MADE IN FRANCE M12:AEP, UK)	
10	4-919-376-81	CASE (MADE IN JAPAN M12:AEP)	
11 ⚠	1-574-127-31	CORD, POWER (MADE IN FRANCE M11/M12/M21:AEP)	
11 ⚠	1-574-358-31	CORD, POWER (WITH CONNECTOR) (M11/M21:Australian)	
11 ⚠	1-574-390-31	CORD, POWER (M12/M41:UK)	
11 ⚠	1-575-651-21	CORD, POWER (MADE IN JAPAN M11/M12/M21:AEP/M11:Saudi Arabia)	
11 ⚠	1-575-653-21	CORD, POWER (M11/M21:E)	
12 ⚠	1-569-007-11	ADAPTOR, CONVERSION 2P (M11/M21:E)	
12 ⚠	1-569-008-11	ADAPTOR, CONVERSION 2P(M11:Saudi Arabia)	
14	* 3-703-244-00	BUSHING (2104), CORD	
15	2-383-566-01	SCREW +PTTWH 3X8 S TIGHT (Saudi Arabia)	
15	4-886-821-11	SCREW, S TIGHT, +PTTWH 3X6 (EXCEPT Saudi Arabia)	

Ref. No.	Part No.	Description	Remark
16	* 4-941-467-11	PANEL, BACK (MADE IN FRANCE M12:UK)	
16	* 4-941-467-21	PANEL (ALSACE), BACK (MADE IN FRANCE)	
16	* 4-942-980-31	PANEL, BACK (MADE IN JAPAN M21:AEP)	
16	* 4-942-980-61	PANEL, BACK (M21:E)	
16	* 4-942-981-01	PANEL, BACK (MADE IN JAPAN M11:AEP)	
16	* 4-942-981-11	PANEL, BACK (M11:Australian)	
16	* 4-942-981-31	PANEL, BACK (M11:E, Saudi Arabia)	
16	* 4-942-981-41	PANEL, BACK (M21:Australian)	
17	* A-4617-692-A	MAIN BOARD, COMPLETE (MADE IN FRANCE)	
17	* A-4617-706-A	MAIN BOARD, COMPLETE (MADE IN JAPAN M11/M21:AEP, Australian)	
17	* A-4617-708-A	MAIN BOARD, COMPLETE (MADE IN JAPAN M11:E, Saudi Arabia/M21:E)	
17	* A-4617-771-A	MAIN BOARD, COMPLETE (MADE IN JAPAN M12:AEP)	
18	4-902-345-01	HEAT SINK	
19	1-575-160-11	WIRE, FLAT TYPE (22 CORE)	
21	* 4-924-098-31	HOLDER, PC BOARD (EXCEPT M12:AEP)	
21	* 4-924-098-41	HOLDER, PC BOARD (M12:AEP)	
22	* 3-349-025-41	HOLDER, PC BOARD	
23	4-933-601-01	FOOT	
24	* A-4617-690-A	DISP BOARD, COMPLETE (MADE IN FRANCE)	
24	* A-4617-770-A	DISP BOARD, COMPLETE (MADE IN JAPAN M12:AEP)	
24	* A-4617-777-A	DISP BOARD, COMPLETE (MADE IN JAPAN M11/M21)	
25	* 1-637-818-11	POWER SW BOARD (MADE IN JAPAN)	
25	* 1-637-818-21	POWER SW BOARD (MADE IN FRANCE)	
26	* 1-637-820-11	VOL BOARD (MADE IN FRANCE EXCEPT M12)	
26	* 1-637-820-21	VOL BOARD (MADE IN LAPAN EXCEPT M12)	
CN401	1-535-883-11	JUMPER, FILM (WITH TERMINAL)	
FLD401	1-519-611-11	INDICATOR TUBE, FLUORESCENT	
T901 ⚠	1-449-922-11	TRANSFORMER, POWER (MADE IN JAPAN M11/M21:AEP, Australian/M12:AEP)	
T901 ⚠	1-449-923-11	TRANSFORMER, POWER (MADE IN JAPAN M11:E, Saudi Arabia/M21:E)	
T901 ⚠	1-449-925-11	TRANSFORMER, POWER (MADE IN FRANCE AEP, UK)	

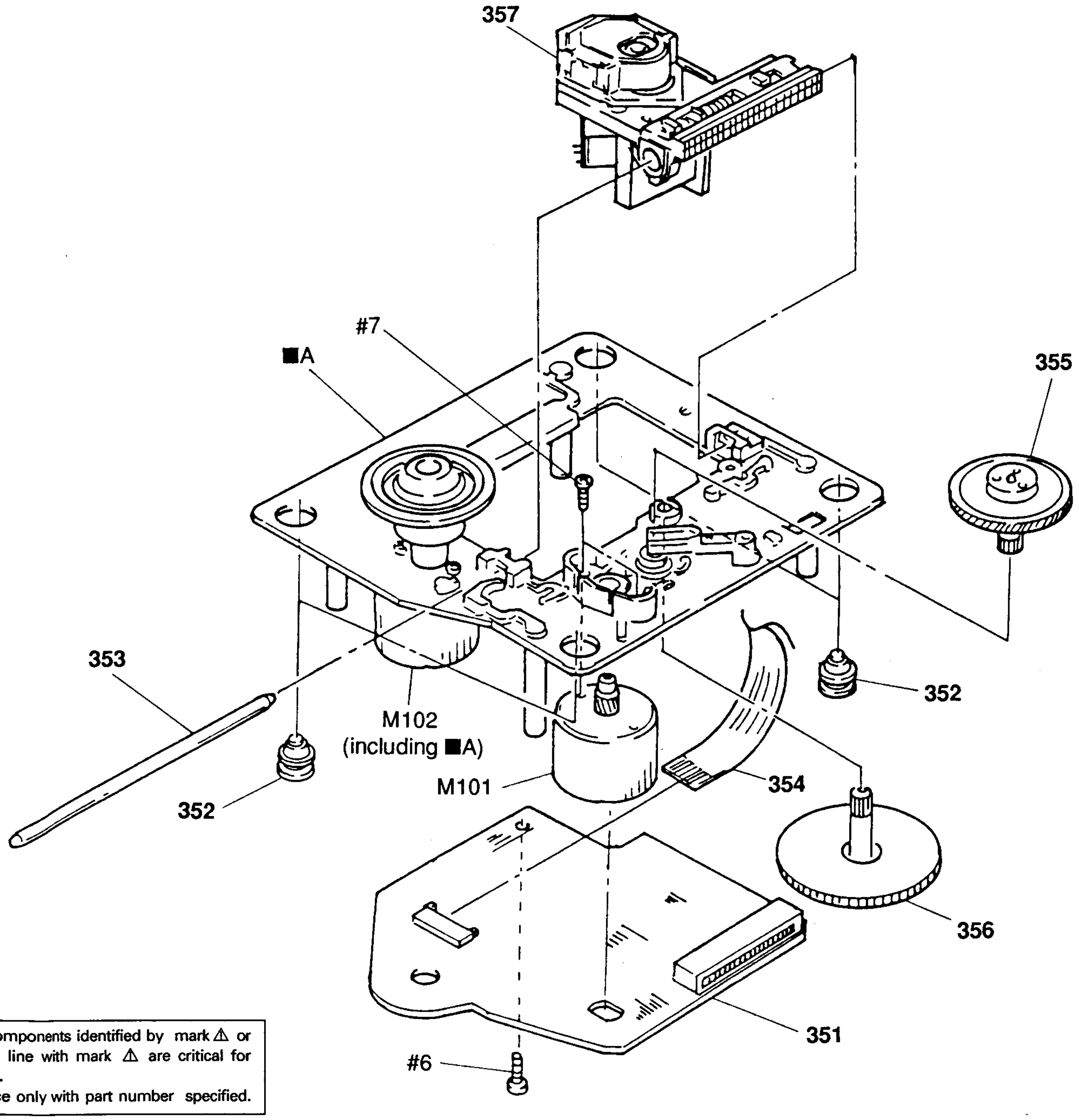
(2) MD SECTION (CDM14-5BD1)


311
310
312
309
BU-5BD1
308
307
313
304
306
305
314 (including 315)
303
#5
315
301
M191
302

Ref. No.	Part No.	Description	Remark
301	4-933-111-01	CHASSIS (MD)	
302	* 1-632-202-11	LOADING BOARD	
303	* 4-917-583-21	BRACKET, YOKE	
304	4-927-649-01	BELT	
305	4-933-109-01	CAM	
306	4-927-651-01	PULLEY (S)	
307	4-927-628-01	GEAR (C)	
308	4-933-107-01	GEAR (PL)	

Ref. No.	Part No.	Description	Remark
309	4-933-112-01	TABLE, DISK	
310	4-933-110-01	HOLDER (MG)	
311	* 1-452-538-11	MAGNET	
312	4-933-134-01	SCREW (+PTPWH M2.6X6)	
313	4-917-541-01	SPRING (B)	
314	4-933-129-01	HOLDER (BU)	
315	4-933-108-01	SHAFT (CAM)	
M191	A-4604-363-A	MOTOR (L) ASSY (LOADING)	

(3) PICK-UP BLOCK (BU-5BD1)


357
#7
■A
355
353
352
M102
(including ■A)
M101
354
352
356
351
#6

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
351	A-4617-161-A	BD BOARD, COMPLETE	
352	4-933-126-01	INSULATOR (A)	
353	4-917-565-01	SHAFT, SLED	
354	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
355	4-917-567-01	GEAR (M)	
356	4-917-564-01	GEAR (P), FLATNESS	
357 ⚠	8-848-144-11	DEVICE, OPTICAL KSS-240A	
M101	X-4917-504-1	MOTOR ASSY (SLED)	
M102	X-4917-523-3	MOTOR ASSY (SPINDLE)	

BD

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE : Metal Oxide-film resistor
  F : nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : μ, for example :
  uA...: μA..., uPA...: μPA...,
  uPB...: μPB..., uPC...: μPC...,
  uPD...: μPD...
- CAPACITORS
  uF : μF
- COILS
  uH : μH
- Hardware(# mark) list is given in the last of this parts list.

Ref. No.	Part No.	Description	Remark
	A-4617-161-A	BD BOARD, COMPLETE ******************	
		< CAPACITOR >	
C101	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C102	1-163-989-11	CERAMIC CHIP 0.033uF 10% 25V	
C103	1-126-163-11	ELECT 0.68uF 20% 50V	
C104	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C105	1-126-154-11	ELECT 47uF 20% 6.3V	
C106	1-126-154-11	ELECT 47uF 20% 6.3V	
C107	1-126-154-11	ELECT 47uF 20% 6.3V	
C108	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C109	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C110	1-163-989-11	CERAMIC CHIP 0.033uF 10% 25V	
C111	1-131-367-00	TANTALUM 22uF 10% 20V	
C112	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C113	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C114	1-164-161-11	CERAMIC CHIP 0.0022uF 10% 100V	
C115	1-164-161-11	CERAMIC CHIP 0.0022uF 10% 100V	
C117	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C118	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C119	1-164-161-11	CERAMIC CHIP 0.0022uF 10% 100V	
C120	1-163-989-11	CERAMIC CHIP 0.033uF 10% 25V	
C151	1-163-019-00	CERAMIC CHIP 0.0068uF 10% 50V	
C152	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C153	1-163-006-11	CERAMIC CHIP 560PF 10% 50V	
C154	1-164-161-11	CERAMIC CHIP 0.0022uF 10% 100V	
C155	1-163-023-00	CERAMIC CHIP 0.015uF 5% 50V	
C171	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C172	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C173	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C174	1-163-038-00	CERAMIC CHIP 0.1uF 25V	

Ref. No.	Part No.	Description	Remark
		< CONNECTOR >	
CN101	1-568-796-11	SOCKET, CONNECTOR 22P	
CN102	1-568-795-11	SOCKET, CONNECTOR 12P	
CN103	* 1-564-721-11	PIN, CONNECTOR (SMALL TYPE) 5P	
		< DIODE >	
D101	8-719-105-72	DIODE RD4.7M-B1	
		< IC >	
IC101	8-752-050-82	IC SC CXA1372Q	
IC102	8-759-822-36	IC LA6532M	
IC103	8-759-633-65	IC M54641L	
		< JACK >	
J101	1-216-295-00	METAL CHIP 0 5% 1/10W	
J102	1-216-295-00	METAL CHIP 0 5% 1/10W	
		< TRANSISTOR >	
Q101	8-729-901-01	TRANSISTOR DTC144EK	
		< RESISTOR >	
R101	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R102	1-216-095-00	METAL CHIP 82K 5% 1/10W	
R103	1-216-091-00	METAL CHIP 56K 5% 1/10W	
R104	1-216-099-00	METAL CHIP 120K 5% 1/10W	
R105	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R106	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R107	1-216-114-00	METAL GLAZE 510K 5% 1/10W	
R108	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R109	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R110	1-216-049-00	METAL CHIP 1K 5% 1/10W	

Ref. No.	Part No.	Description				Remark
R111	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R112	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R113	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R114	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R152	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R153	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R154	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R155	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R156	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R157	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R158	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R159	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R160	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R171	1-216-001-00	METAL CHIP	10	5%	1/10W	
R172	1-216-001-00	METAL CHIP	10	5%	1/10W	
R173	1-216-001-00	METAL CHIP	10	5%	1/10W	
R174	1-216-001-00	METAL CHIP	10	5%	1/10W	

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description
RV101	1-238-016-11	RES, ADJ, CARBON 10K (TRACKING GAIN)
RV102	1-238-016-11	RES, ADJ, CARBON 10K (FOCUS GAIN)

< SWITCH >

Ref. No.	Part No.	Description
S101	1-572-085-11	SWITCH, LEAF (LIMIT IN)

****

* A-4617-690-A DISP BOARD, COMPLETE (MADE IN FRANCE)
* A-4617-770-A DISP BOARD, COMPLETE
(MADE IN JAPAN M12:AEP)
* A-4617-777-A DISP BOARD, COMPLETE
(MADE IN JAPAN M11/M21)
****

* 4-923-103-01 HOLDER, FL TUBE

< CAPACITOR >

Ref. No.	Part No.	Description			
C401	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C402	1-124-261-00	ELECT	10uF	20%	50V
C403	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C404	1-124-261-00	ELECT	10uF	20%	50V

< CONNECTOR >

Ref. No.	Part No.	Description
CN401	1-535-883-11	JUMPER, FILM (WITH TERMINAL)

< FLUORESCENT INDICATOR TUBE >

Ref. No.	Part No.	Description
FLD401	1-519-611-11	INDICATOR TUBE, FLUORESCENT

< IC >

Ref. No.	Part No.	Description	Remark
IC401	8-752-817-41	IC CXP50112-097Q	
IC402	8-749-920-83	IC GP1U52XB	

< RESISTOR >

Ref. No.	Part No.	Description				Remark
R402	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R403	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R404	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R405	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R406	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R407	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R408	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R409	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R410	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R411	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R412	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R413	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R414	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R415	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R416	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R417	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R418	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R419	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R420	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R421	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R422	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R423	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R424	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R425	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R426	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R427	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R428	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R429	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R430	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R431	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R432	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R433	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R434	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R435	1-216-079-00	METAL CHIP	18K	5%	1/10W	

< SWITCH > (MADE IN JAPAN)

Ref. No.	Part No.	Description
S401	1-554-303-52	SWITCH, KEY BOARD (1)
S402	1-554-303-52	SWITCH, KEY BOARD (2)
S403	1-554-303-52	SWITCH, KEY BOARD (3)
S404	1-554-303-52	SWITCH, KEY BOARD (4)
S405	1-554-303-52	SWITCH, KEY BOARD (5)

When indicating parts by reference number, please include the board name.

DISP LOADING MAIN

Ref. No.	Part No.	Description	Remark
S406	1-554-303-52	SWITCH, KEY BOARD (6)	
S407	1-554-303-52	SWITCH, KEY BOARD (7)	
S408	1-554-303-52	SWITCH, KEY BOARD (8)	
S409	1-554-303-52	SWITCH, KEY BOARD (9)	
S410	1-554-303-52	SWITCH, KEY BOARD (10)	
S411	1-554-303-52	SWITCH, KEY BOARD (11)	
S412	1-554-303-52	SWITCH, KEY BOARD (12)	
S413	1-554-303-52	SWITCH, KEY BOARD (>12)	
S414	1-554-303-52	SWITCH, KEY BOARD (MUSIC SCAN)	
S415	1-554-303-52	SWITCH, KEY BOARD (P.SEARCH)	
S416	1-554-303-52	SWITCH, KEY BOARD (CONTINUE)	
S417	1-554-303-52	SWITCH, KEY BOARD (SHUFFLE)	
S418	1-554-303-52	SWITCH, KEY BOARD (PROGRAM)	
S419	1-554-303-52	SWITCH, KEY BOARD (EDIT/TIME FADE)	
S420	1-554-303-52	SWITCH, KEY BOARD (▶▶|.▶▶)	
S421	1-554-303-52	SWITCH, KEY BOARD (|◀◀.◀◀)	
S422	1-554-303-52	SWITCH, KEY BOARD (■)	
S423	1-554-303-52	SWITCH, KEY BOARD (❚❚)	
S424	1-554-303-52	SWITCH, KEY BOARD (▶)	
S425	1-554-303-52	SWITCH, KEY BOARD (OPEN/CLOSE⏏)	
S426	1-554-303-52	SWITCH, KEY BOARD (CHECK)	
S427	1-554-303-52	SWITCH, KEY BOARD (CLEAR)	
S428	1-554-303-52	SWITCH, KEY BOARD (TIME)	
S429	1-554-303-52	SWITCH, KEY BOARD (REPEAT)	
S430	1-554-303-52	SWITCH, KEY BOARD (FADER)	

< SWITCH > (MADE IN FRANCE)

Ref. No.	Part No.	Description	Remark
S401	1-554-303-81	SWITCH, KEY BOARD (1)	
S402	1-554-303-81	SWITCH, KEY BOARD (2)	
S403	1-554-303-81	SWITCH, KEY BOARD (3)	
S404	1-554-303-81	SWITCH, KEY BOARD (4)	
S405	1-554-303-81	SWITCH, KEY BOARD (5)	
S406	1-554-303-81	SWITCH, KEY BOARD (6)	
S407	1-554-303-81	SWITCH, KEY BOARD (7)	
S408	1-554-303-81	SWITCH, KEY BOARD (8)	
S409	1-554-303-81	SWITCH, KEY BOARD (9)	
S410	1-554-303-81	SWITCH, KEY BOARD (10)	
S411	1-554-303-81	SWITCH, KEY BOARD (11)	
S412	1-554-303-81	SWITCH, KEY BOARD (12)	
S413	1-554-303-81	SWITCH, KEY BOARD (>12)	
S414	1-554-303-81	SWITCH, KEY BOARD (MUSIC SCAN)	
S415	1-554-303-81	SWITCH, KEY BOARD (P.SEARCH)	
S416	1-554-303-81	SWITCH, KEY BOARD (CONTINUE)	
S417	1-554-303-81	SWITCH, KEY BOARD (SHUFFLE)	
S418	1-554-303-81	SWITCH, KEY BOARD (PROGRAM)	
S419	1-554-303-81	SWITCH, KEY BOARD (EDIT/TIME FADE)	
S420	1-554-303-81	SWITCH, KEY BOARD (▶▶|.▶▶)	
S421	1-554-303-81	SWITCH, KEY BOARD (|◀◀.◀◀)	
S422	1-554-303-81	SWITCH, KEY BOARD (■)	
S423	1-554-303-81	SWITCH, KEY BOARD (❚❚)	
S424	1-554-303-81	SWITCH, KEY BOARD (▶)	
S425	1-554-303-81	SWITCH, KEY BOARD (OPEN/CLOSE⏏)	
S426	1-554-303-81	SWITCH, KEY BOARD (CHECK)	
S427	1-554-303-81	SWITCH, KEY BOARD (CLEAR)	
S428	1-554-303-81	SWITCH, KEY BOARD (TIME)	
S429	1-554-303-81	SWITCH, KEY BOARD (REPEAT)	
S430	1-554-303-81	SWITCH, KEY BOARD (FADER)	

< CERAMIC >

Ref. No.	Part No.	Description	Remark
X401	1-577-358-21	VIBRATOR, CERAMIC (4MHz)	

****

* 1-632-202-11 LOADING BOARD
****

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
CN301	* 1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P	

< SWITCH >

Ref. No.	Part No.	Description	Remark
S191	1-572-086-11	SWITCH, LEAF (OUT SW)	
S192	1-572-086-11	SWITCH, LEAF (IN SW)	

****

* A-4617-692-A MAIN BOARD, COMPLETE (MADE IN FRANCE)
* A-4617-706-A MAIN BOARD, COMPLETE
(MADE IN JAPAN M11/M21:AEP, Australian)
* A-4617-708-A MAIN BOARD, COMPLETE
(MADE IN JAPAN M11:E, Saudi Arabia)
* A-4617-771-A MAIN BOARD, COMPLETE
(MADE IN JAPAN M12:AEP)
****

4-902-345-01 HEAT SINK
7-682-547-09 SCREW +B 3X6

< CAPACITOR >

Ref. No.	Part No.	Description			
C201	1-124-572-11	ELECT	100uF	20%	63V
C202	1-123-875-11	ELECT	10uF	20%	50V
C203	1-124-360-00	ELECT	1000uF	20%	16V
C204	1-124-898-11	ELECT	4700uF	20%	16V
C205	1-124-927-11	ELECT	4.7uF	20%	100V
C206	1-123-875-11	ELECT	10uF	20%	50V
C207	1-123-875-11	ELECT	10uF	20%	50V
C208	1-124-472-11	ELECT	470uF	20%	10V
C209	1-124-472-11	ELECT	470uF	20%	10V
C210	1-124-120-11	ELECT	220uF	20%	25V

When indicating parts by reference number, please include the board name.

MAIN

Ref. No.	Part No.	Description			Remark
C211	1-124-472-11	ELECT	470uF	20%	10V
C212	1-124-472-11	ELECT	470uF	20%	10V
C221	1-164-159-11	CERAMIC	0. 1uF		50V
C301	1-124-477-11	ELECT	47uF	20%	25V
C302	1-124-791-11	ELECT	1. 0uF	20%	100V
C311	1-106-383-00	MYLAR	0. 047uF	5%	200V
C312	1-161-374-11	CERAMIC	0. 0015uF	20%	50V
C313	1-161-494-00	CERAMIC	0. 022uF		25V
C314	1-162-306-11	CERAMIC	0. 01uF	20%	16V
C315	1-124-902-00	ELECT	0. 47uF	20%	50V
C316	1-161-494-00	CERAMIC	0. 022uF		25V
C317	1-164-159-11	CERAMIC	0. 1uF		50V
C321	1-161-494-00	CERAMIC	0. 022uF		25V
C331	1-162-208-31	CERAMIC	24PF	5%	50V
C332	1-106-220-00	MYLAR	0. 1uF	5%	100V
C333	1-161-494-00	CERAMIC	0. 022uF		25V
C335	1-162-205-31	CERAMIC	18PF	5%	50V
C341	1-161-494-00	CERAMIC	0. 022uF		25V
C342	1-124-477-11	ELECT	47uF	20%	25V
C343	1-161-494-00	CERAMIC	0. 022uF		25V
C344	1-161-494-00	CERAMIC	0. 022uF		25V
C345	1-124-477-11	ELECT	47uF	20%	25V
C346	1-164-159-11	CERAMIC	0. 1uF		50V
C347	1-124-477-11	ELECT	47uF	20%	25V
C348	1-164-159-11	CERAMIC	0. 1uF		50V
C349	1-161-494-00	CERAMIC	0. 022uF		25V
C350	1-124-477-11	ELECT	47uF	20%	25V
C351	1-161-494-00	CERAMIC	0. 022uF		25V
C352	1-124-477-11	ELECT	47uF	20%	25V
C353	1-162-199-31	CERAMIC	10PF	5%	50V
C354	1-162-199-31	CERAMIC	10PF	5%	50V
C355	1-161-494-00	CERAMIC	0. 022uF		25V
C356	1-124-477-11	ELECT	47uF	20%	25V
C357	1-124-472-11	ELECT	470uF	20%	10V
C361	1-162-285-31	CERAMIC	180PF	10%	50V
C362	1-162-285-31	CERAMIC	180PF	10%	50V
C363	1-162-283-31	CERAMIC	120PF	10%	50V
C364	1-162-283-31	CERAMIC	120PF	10%	50V
C365	1-162-283-31	CERAMIC	120PF	10%	50V
C366	1-162-283-31	CERAMIC	120PF	10%	50V
C367	1-161-494-00	CERAMIC	0. 022uF		25V
C368	1-161-494-00	CERAMIC	0. 022uF		25V
C371	1-106-359-00	MYLAR	4700PF	5%	200V
C372	1-106-359-00	MYLAR	4700PF	5%	200V
C373	1-106-345-00	MYLAR	0. 0012uF	5%	100V
C374	1-106-345-00	MYLAR	0. 0012uF	5%	100V
C375	1-161-494-00	CERAMIC	0. 022uF		25V
C376	1-161-494-00	CERAMIC	0. 022uF		25V

Ref. No.	Part No.	Description			Remark
C377	1-124-477-11	ELECT	47uF	20%	25V
C378	1-124-477-11	ELECT	47uF	20%	25V
C379	1-106-349-00	MYLAR	0. 0018uF	5%	100V
C380	1-106-349-00	MYLAR	0. 0018uF	5%	100V
C392	1-164-159-11	CERAMIC	0. 1uF		50V
C394	1-164-159-11	CERAMIC	0. 1uF		50V (MADE IN JAPAN M11/M21)

< CONNECTOR >

CN201	*·1-580-230-11	PIN, CONNECTOR (PC BOARD) 3P
CN301	* 1-568-843-11	SOCKET, CONNECTOR 28P
CN302	* 1-568-822-11	SOCKET, CONNECTOR 22P
CN381	* 1-564-708-11	PIN, CONNECTOR (SMALL TYPE) 6P (EXCEPT M12)

< DIODE >

D201	8-719-200-82	DIODE 11ES2
D202	8-719-109-96	DIODE RD6. 8ES-B1
D203	8-719-200-82	DIODE 11ES2
D204	8-719-200-82	DIODE 11ES2
D205	8-719-200-82	DIODE 11ES2
D206	8-719-200-82	DIODE 11ES2
D207	8-719-114-49	DIODE RD7. 5JS-B2
D208	8-719-109-89	DIODE RD5. 6ES-B2
D209	8-719-107-94	DIODE 1SS202-1 (MADE IN JAPAN M12: Saudi Arabia/M12:AEP)
D209	8-719-987-63	DIODE 1N4148M (MADE IN JAPAN M11: Saudi Arabia/M12:AEP)
D341	8-719-210-21	DIODE 11EQS04-TA1B
D351	8-719-107-94	DIODE 1SS202-1 (MADE IN JAPAN EXCEPT M11: Saudi Arabia/M12:AEP)
D351	8-719-987-63	DIODE 1N4148M (MADE IN JAPAN M11: Saudi Arabia/M12:AEP)

< IC >

IC201	8-759-633-42	IC M5293L
IC202	8-759-630-21	IC M5290P-16
IC203	8-759-945-58	IC RC4558P
IC301	8-752-337-26	IC CXD2500AQ
IC302	8-752-337-09	IC CXD2554P
IC303	8-759-917-18	IC SN74HCU04AN
IC305	8-752-334-87	IC CXD2552Q
IC306	8-759-990-82	IC TL082CP
IC307	8-759-945-58	IC RC4558P

< JACK >

J381	1-569-442-11	JACK, PIN 2P (LINE OUT)

When indicating parts by reference number, please include the board name.

MAIN

Ref. No.	Part No.	Description	Remark
		< COIL >	
L331	1-408-403-00	INDUCTOR 3.3uH	
		< IC LINK >	
PS201⚠	1-532-685-00	LINK, IC	
PS202⚠	1-532-637-00	LINK, IC 1.0A	
		< TRANSISTOR >	
Q201	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q202	8-729-140-96	TRANSISTOR 2SD774-34	
Q203	8-729-111-67	TRANSISTOR 2SB1094-L	
Q204	8-729-900-65	TRANSISTOR DTA144ES	
Q205	8-729-900-89	TRANSISTOR DTC144ES	
Q206	8-729-900-89	TRANSISTOR DTC144ES	
Q207	8-729-230-45	TRANSISTOR 2SC2458TP-YGR	
Q208	8-729-111-67	TRANSISTOR 2SB1094-L (MADE IN JAPAN M12:AEP)	
Q208	8-729-821-73	TRANSISTOR 2SB1274SA-RS (MADE IN JAPAN EXCEPT M12:AEP)	
Q209	8-729-281-52	TRANSISTOR 2SC1815-Y	
Q343	8-729-900-65	TRANSISTOR DTA144ES	
Q344	8-729-900-89	TRANSISTOR DTC144ES	
Q371	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q372	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q373	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q374	8-729-141-30	TRANSISTOR 2SC3623A-LK	
		< RESISTOR >	
R201	1-249-435-11	CARBON 33K 5% 1/4W	
R202	1-249-438-11	CARBON 56K 5% 1/4W	
R203	1-249-429-11	CARBON 10K 5% 1/4W	
R204	1-249-425-11	CARBON 4.7K 5% 1/4W	
R205	1-249-425-11	CARBON 4.7K 5% 1/4W	
R206	1-249-417-11	CARBON 1K 5% 1/4W	
R207	1-249-417-11	CARBON 1K 5% 1/4W	
R208	1-249-423-11	CARBON 3.3K 5% 1/4W	
R209	1-249-413-11	CARBON 470 5% 1/4W	
R210	1-249-429-11	CARBON 10K 5% 1/4W	
R211	1-249-410-11	CARBON 270 5% 1/4W	
R214	1-249-417-11	CARBON 1K 5% 1/4W	
R301	1-249-421-11	CARBON 2.2K 5% 1/4W	
R302	1-249-421-11	CARBON 2.2K 5% 1/4W	
R303	1-249-421-11	CARBON 2.2K 5% 1/4W	
R304	1-249-421-11	CARBON 2.2K 5% 1/4W	
R311	1-249-423-11	CARBON 3.3K 5% 1/4W	
R312	1-249-429-11	CARBON 10K 5% 1/4W	
R313	1-249-423-11	CARBON 3.3K 5% 1/4W	
R314	1-249-429-11	CARBON 10K 5% 1/4W	
R315	1-249-417-11	CARBON 1K 5% 1/4W	
R316	1-249-417-11	CARBON 1K 5% 1/4W	
R317	1-249-420-11	CARBON 1.8K 5% 1/4W	
R318	1-249-441-11	CARBON 100K 5% 1/4W	
R321	1-249-417-11	CARBON 1K 5% 1/4W	
R322	1-249-417-11	CARBON 1K 5% 1/4W	
R323	1-249-417-11	CARBON 1K 5% 1/4W	
R324	1-249-418-11	CARBON 1.2K 5% 1/4W	
R331	1-249-409-11	CARBON 220 5% 1/4W	
R332	1-247-887-00	CARBON 220K 5% 1/4W	
R333	1-249-417-11	CARBON 1K 5% 1/4W	
R334	1-249-409-11	CARBON 220 5% 1/4W	
R341	1-249-393-11	CARBON 10 5% 1/4W	
R342	1-249-417-11	CARBON 1K 5% 1/4W	
R347	1-249-441-11	CARBON 100K 5% 1/4W	
R348	1-249-429-11	CARBON 10K 5% 1/4W	
R351	1-249-429-11	CARBON 10K 5% 1/4W	
R352	1-249-429-11	CARBON 10K 5% 1/4W	
R353	1-249-429-11	CARBON 10K 5% 1/4W	
R354	1-249-429-11	CARBON 10K 5% 1/4W	
R355	1-247-848-11	CARBON 5.1K 5% 1/4W	
R356	1-249-405-11	CARBON 100 5% 1/4W	
R361	1-247-838-00	CARBON 2K 5% 1/4W	
R362	1-247-838-00	CARBON 2K 5% 1/4W	
R363	1-247-838-00	CARBON 2K 5% 1/4W	
R364	1-247-838-00	CARBON 2K 5% 1/4W	
R365	1-249-432-11	CARBON 18K 5% 1/4W	
R366	1-249-432-11	CARBON 18K 5% 1/4W	
R367	1-249-432-11	CARBON 18K 5% 1/4W	
R368	1-249-432-11	CARBON 18K 5% 1/4W	
R369	1-249-419-11	CARBON 1.5K 5% 1/4W	
R370	1-249-419-11	CARBON 1.5K 5% 1/4W	
R371	1-249-419-11	CARBON 1.5K 5% 1/4W	
R372	1-249-419-11	CARBON 1.5K 5% 1/4W	
R373	1-247-887-00	CARBON 220K 5% 1/4W	
R374	1-247-887-00	CARBON 220K 5% 1/4W	
R375	1-249-409-11	CARBON 220 5% 1/4W	
R376	1-249-409-11	CARBON 220 5% 1/4W	
R377	1-249-409-11	CARBON 220 5% 1/4W	
R378	1-249-409-11	CARBON 220 5% 1/4W	
R379	1-249-425-11	CARBON 4.7K 5% 1/4W	
R380	1-249-425-11	CARBON 4.7K 5% 1/4W	
R381	1-249-425-11	CARBON 4.7K 5% 1/4W	
R382	1-249-425-11	CARBON 4.7K 5% 1/4W	
R383	1-249-414-11	CARBON 560 5% 1/4W	
R384	1-249-414-11	CARBON 560 5% 1/4W	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref. No.	Part No.	Description	Remark
		< SWITCH >	
S201 ⚠	1-571-722-11	SWITCH, VOLTAGE SELECTION	(E, Saudi Arabia)
		< CRYSTAL >	
X351	1-579-161-11	VIBRATOR, CRYSTAL (45MHz)	

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* 1-637-818-11 POWER SW BOARD (MADE IN JAPAN)
* 1-637-818-21 POWER SW BOARD (MADE IN FRANCE)
****

Ref. No.	Part No.	Description	Remark
		< CONNECTOR >	
CN491	* 1-568-953-11	PIN, CONNECTOR 4P	
		< SWITCH >	
S491	1-554-118-00	SWITCH, PUSH (1 KEY) (POWER)	

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* 1-637-820-11 VOL BOARD (MADE IN JAPAN EXCEPT M12)
* 1-637-820-21 VOL BOARD (MADE IN FRANCE EXCEPT M12)
****

Ref. No.	Part No.	Description	Remark
		< CAPACITOR >	
C510	1-124-584-00	ELECT 100uF 20% 10V	
C511	1-163-133-00	CERAMIC CHIP 470PF 5% 50V	
C512	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C520	1-124-584-00	ELECT 100uF 20% 10V	
C521	1-163-133-00	CERAMIC CHIP 470PF 5% 50V	
		< CONNECTOR >	
CN501	* 1-564-708-11	PIN, CONNECTOR (SMALL TYPE) 6P	
		< IC >	
IC501	8-759-981-86	IC RC4556MA	
		< JACK >	
J501	1-568-519-41	JACK, LARGE TYPE (HEADPHONES)	
		< RESISTOR >	
R510	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R511	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R512	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R513	1-216-025-00	METAL CHIP 100 5% 1/10W	
R520	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R521	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R522	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R523	1-216-025-00	METAL CHIP 100 5% 1/10W	
		< VARIABLE RESISTOR >	
RV501	1-241-386-11	RES, VAR, CARBON 20K/20K (PHONE LEVEL)	

****

MISCELLANEOUS
****

Ref. No.	Part No.	Description	Remark
11 ⚠	1-574-127-31	CORD, POWER	(MADE IN FRANCE M11/M12/M21:AEP)
11 ⚠	1-574-358-31	CORD, POWER (WITH CONNECTOR)	(M11/M21:Australian)
11 ⚠	1-574-390-31	CORD, POWER	(M12/M41:UK)
11 ⚠	1-575-651-21	CORD, POWER	(MADE IN JAPAN M11/M12/M21:AEP/M11:Saudi Arabia)
11 ⚠	1-575-653-21	CORD, POWER	(M11/M21:E)
12 ⚠	1-569-007-11	ADAPTOR, CONVERSION 2P	(M11/M21:E)
12 ⚠	1-569-008-11	ADAPTOR, CONVERSION 2P	(M11:Saudi Arabia)
19	1-575-160-11	WIRE, FLAT TYPE (22 CORE)	
25	* 1-637-818-11	POWER SW BOARD (MADE IN JAPAN)	
25	* 1-637-818-21	POWER SW BOARD (MADE IN FRANCE)	
26	* 1-637-820-11	VOL BOARD (MADE IN FRANCE EXCEPT M12)	
26	* 1-637-820-21	VOL BOARD (MADE IN LAPAN EXCEPT M12)	
311	* 1-452-538-11	MAGNET	
354	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
357 ⚠	8-848-144-11	DEVICE, OPTICAL KSS-240A	
CN401	1-535-883-11	JUMPER, FILM (WITH TERMINAL)	
FLD401	1-519-611-11	INDICATOR TUBE, FLUORESCENT	
T901 ⚠	1-449-922-11	TRANSFORMER, POWER	(MADE IN JAPAN M11/M21:AEP, Australian/M12:AEP)
T901 ⚠	1-449-923-11	TRANSFORMER, POWER	(MADE IN JAPAN M11:E, Saudi Arabia/M21:E)
T901 ⚠	1-449-925-11	TRANSFORMER, POWER	(MADE IN FRANCE AEP, UK)

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The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref. No.	Part No.	Description	Remark
		ACCESSORY & PACKING MATERIAL	
	1-465-635-11	REMOTE, COMMANDER RM-D295 (MADE IN JAPAN M12)	
	1-465-635-21	REMOTE, COMMANDER RM-D295 (MADE IN FRANCE M12)	
	1-558-271-11	CORD, CONNECTION	
	3-752-961-11	MANUAL, INSTRUCTION(MADE IN JAPAN M21)	
	3-752-961-41	MANUAL, INSTRUCTION (MADE IN JAPAN M21:AEP)	
	3-752-961-51	MANUAL, INSTRUCTION (E, F, SP, P) (MADE IN FRANCE M21:AEP/M41:UK)	
	3-752-961-61	MANUAL, INSTRUCTION (G, D, SW, I) (MADE IN FRANCE M21:AEP)	
	3-752-962-11	MANUAL, INSTRUCTION(MADE IN JAPAN M11)	
	3-752-962-41	MANUAL, INSTRUCTION (G, D, SW, I) (MADE IN JAPAN M11:AEP)	
	3-752-962-51	MANUAL, INSTRUCTION (E, F, SP, P) (MADE IN FRANCE M11:AEP)	
	3-752-962-61	MANUAL, INSTRUCTION (G, D, SW, I) (MADE IN FRANCE M11:AEP)	
	* 3-795-629-15	INSTRUCTION (MADE IN JAPAN M11/M12/ M21:AEP)	
	* 3-795-629-45	INSTRUCTION (MADE IN FRANCE M12:AEP)	
	* 4-922-998-03	CUSHION (MADE IN JAPAN M11/M12/M21)	
	* 4-927-355-02	CUSHION (MADE IN FRANCE:AEP, UK)	
	* 4-941-548-01	LABEL, CLASS 1	
	* 4-942-898-21	INDIVIDUAL CARTON (MADE IN FRANCE M11:AEP)	
	* 4-942-898-31	INDIVIDUAL CARTON (MADE IN FRANCE M12:AEP, UK)	
	* 4-944-042-01	INDIVIDUAL CARTON (MADE IN JAPAN M11)	
	* 4-944-042-11	INDIVIDUAL CARTON (MADE IN JAPAN M12)	
	* 4-944-042-21	INDIVIDUAL CARTON (MADE IN JAPAN M21)	
	* 4-942-898-11	INDIVIDUAL CARTON (MADE IN FRANCE M12)	

****

HARDWARE LIST

#1	7-682-548-09	SCREW +BVTT 3X8 (S)
#2	7-682-547-04	SCREW +BVTT 3X6 (S)
#3	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S
#4	7-682-547-09	SCREW +B 3X6
#5	7-621-775-10	SCREW +B 2.6X4
#6	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S
#7	7-621-255-15	SCREW +P 2X3

D: DUTCH
E: ENGLISH
F: FRENCH
G: GERMAN
I: ITALIAN
P: PORTUGUESE
SP: SPANISH
SW: SWEDISH

English
91B1969-1
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Sony Corporation
Audio Group

Published by Customer Relations and Service Group

SS-A305/A305E

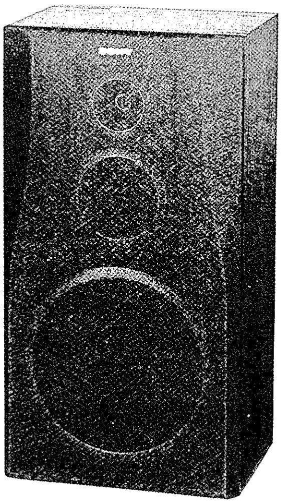
SERVICE MANUAL

AEP Model
UK Model

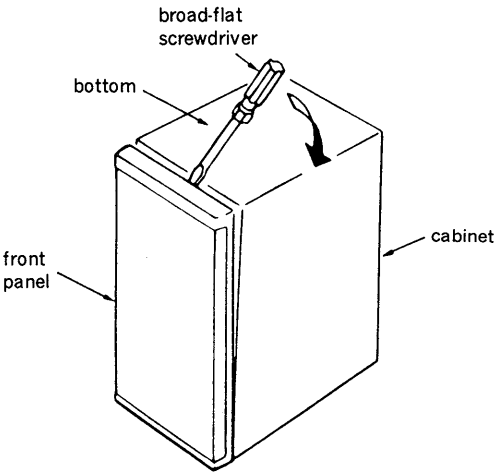
SPECIFICATIONS

Speaker system	3-way
Speaker units	Woofer : 16cm Mid-range: 6.5cm cone type Tweeter : 1.6cm
Power handling capacity	Maximum input power 70W
Sensitivity	88dB/W/m
Frequency range	50-20,000 Hz
Rated impedance	6 ohms
Dimensions	Approx. 250x470x195mm(w/h/d) (SS-A305) 240x431x195mm(w/h/d) (SS-A305E)
Weight	Approx. 4.5 kg (SS-A305) 3.9 kg (SS-A305E)

Design and specifications subject to change without notice.

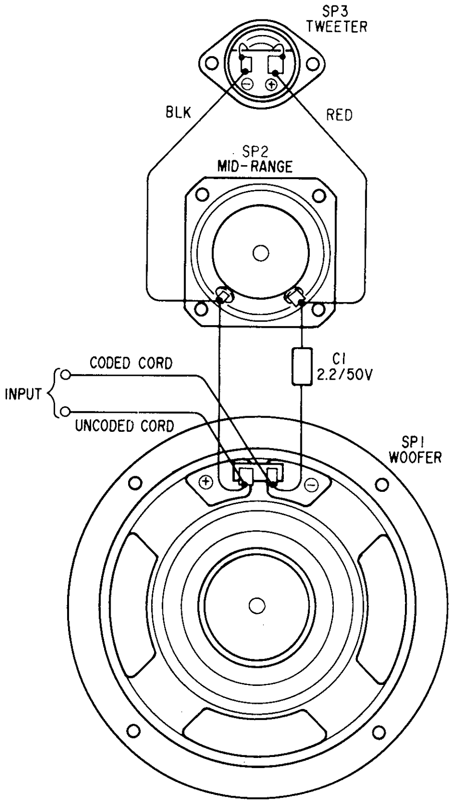


1. FRONT PANEL REMOVAL


broad-flat screwdriver
bottom
cabinet
front panel

Note : Be careful not to scratch the cabinet.

2. WIRING DIAGRAM


SP3 TWEETER
BLK
RED
SP2 MID-RANGE
CODED CORD
INPUT
UNCODED CORD
C1 2.2/50V
SP1 WOOFER

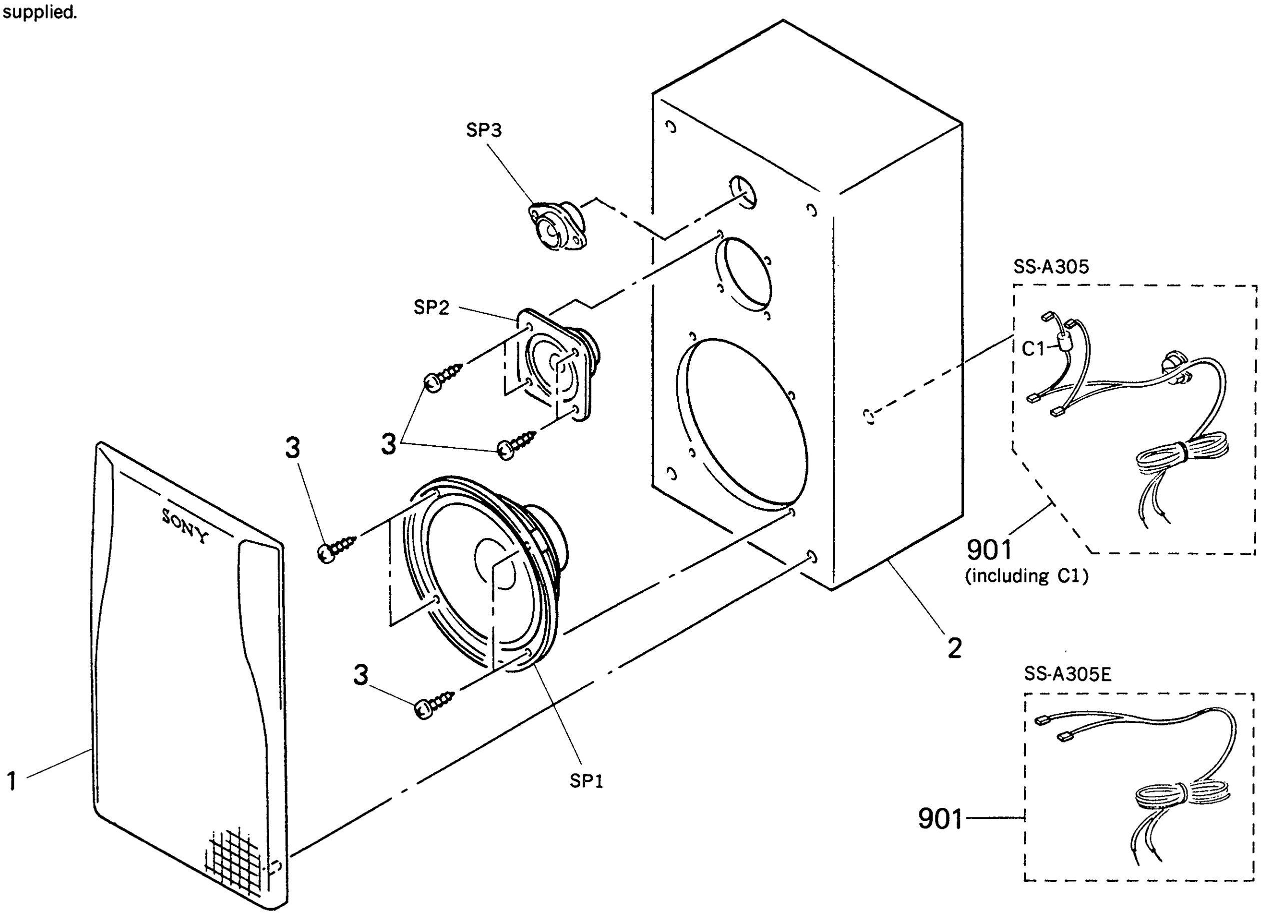
SPEAKER SYSTEM

SONY®

3. EXPLODED VIEW AND PARTS LIST

Note :

- The mechanical parts with no reference number in the exploded views are not supplied.



No.	Part No.	Description
1	T-8150-392-A	PANEL ASSY, FRONT (A305)
	T-8150-393-A	PANEL ASSY, FRONT (A305E)
2	T-8151-309-1	SPEAKER BOX (A305)
	T-8151-310-1	SPEAKER BOX (A305E)
3	T-8150-573-1	TAPPING SCREW +P 4X15

ELECTRICAL PARTS

No.	Part No.	Description
901	T-8150-407-A	WIRE KIT ASSY (A305)
	T-8110-520-1	CORD, SPEAKER (A305E)
C 1	T-8110-253-1	CAP 2.2μF 50V
SP1	T-8110-420-1	WOOFER
SP2	T-8110-473-1	MID RANGE
SP3	1-544-135-21	TWEETER

ACCESSORY & PACKING MATERIAL

Part No.	Description
T-8151-349-1	MANUAL, INSTRUCTION (A305)
T-8151-350-1	MANUAL, INSTRUCTION (A305E)

9-956-423-11

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